Textile World

ESTABLISHED 1868

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Editor: DOUGLAS G. WOOLF

Technical Men Are Not Luxuries

DURING the last several months a parade of men has passed through our office. The parade, viewed from the caliber of the participants, has been impressing; viewed from their mission, it has been depressing.

These men have been technicians, let out of textile mill organizations, looking for jobs. They have included chemists, physicists, engineers, and research workers of all types. They have ranged from men who have spent a quarter of a century in the industry to others who came into it a year or two ago, as technical school graduates, with high hopes for the future.

Many of them were known to us as outstanding authorities in their respective fields. A few years ago, news of their release would have brought immediate offers of other jobs. Today they are willing to accept almost anything.

▼

We are sorry for these men. We are more sorry for the industry that is losing their services.

This is rather an inappropriate time to quarrel, academically, with those who are cutting down expenses. All of us are doing the same thing. But the extent to which injudicious "chiseling" is impairing the future of many firms is a serious matter.

It is all right to talk—as so many, especially bankers, do—about eliminating all but "productive" members of company organizations. Certainly, no one will deny that the passing of many so-called "stuffed shirts" worked a hardship upon no one but the individuals themselves. However there are many jobs which, while not producing goods today, are producing results for tomorrow. These jobs should not be eliminated thoughtlessly.

How can the textile industry hope ever to lift itself out of depression if research workers are not creating new products, if engineers are not working out more efficient methods of producing goods, if chemists are not developing new finishes?

▼

As we indicated previously, we are not arguing for the maintenance of highly-paid research staffs at a time when every dollar counts. We are arguing, however, for the maintenance of sufficient technical staff to keep the company moving on toward better things.

Many of the younger technical men now in the mills are textile school graduates of recent years. They are not highly paid. Probably their salaries are not much larger than the wages of some of the plant operatives.

So here is a suggestion. Instead of discharging these men, manufacturers might put them to work in the mill, operating machines. From what we have seen in our "parade," we believe most of them would jump at the chance. The practical experience they gain in the plant would make them of even greater value when technical activities are resumed.

Whatever is done, this thought should be kept in mind: It is going to be increasingly important in the future to make a better product, and to make it more efficiently, than one's competitors. The men who can produce those results should not be discarded as "luxuries."

A Call for Action

TO CORRECT ABUSES IN COTTON TEXTILE MERCHANDISING

An Interview with

B. B. Gossett

President, American Cotton Manufacturers Association

◆ There are three excellent reasons why Mr. Gossett's opinions on textile merchandising are important. First, he has been one of the outstanding and courageous leaders in constructive thought and action during recent years. Second, his own distribution problem, as a mill executive, is not the exceptional one, as represented by companies selling products for direct consumer use or making specialties which in turn permit of specialized promotional activities; instead, his problem is similar to that of the average textile manufacturer. Finally, his recent elevation to the presidency of the American Cotton Manufacturers Association makes his thoughts and recommendations of particular significance at this critical stage of the industry's development.

Although his interests have been tied up largely with the cotton branch, his fundamental reasoning applies equally to every other division of textile manufacture.—*Editor.*

CURTAILMENT of textile production, vitally necessary though it has been and is, cannot be regarded as a permanent cure for the ills of the industry. Certain fundamental weaknesses in the distribution of textile products must be corrected, and corrected speedily, if there is to be hope for more prosperous conditions for management and workers.

This is the starting point of B. B. Gossett's thinking, as he expressed it to us. Speaking as one who has been in the vanguard of every move toward balancing production with demand, and as one who will be a leader in further moves of this character in the months directly ahead, he nevertheless sees a broader and more far-reaching job which must be tackled.

As we talked with him, we sensed a feeling that the time for tackling that job was at hand; that the time for merely talking about it had passed. We recognized in his attitude, a sober conviction that the industry faced a crisis. This conviction was unaccompanied by panic, but equally unaccompanied by a willingness to temporize.

Although he has no panacea to offer, no cut-and-dried plan which he wants to "sell" to the industry, Mr. Gossett does have definite ideas as to the basic lines along which future effort must be pushed.

He isolates as outstanding, these two problems: (1) The development of some type of centralized control of the sale of gray goods; and (2) the curbing of rumor and propaganda which result in ruinously low prices.

Centralized Control in Selling

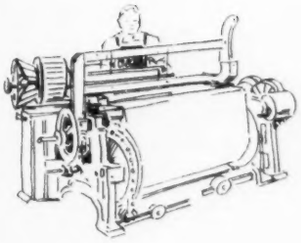
We said that Mr. Gossett had no plan to "sell." Consequently, when he discussed the first of these two problems with us, he argued neither in favor of nor against any specific method of sales representation. He neither praised one part of the machinery of distribution, nor damned another. Instead, he merely pointed out the ultimate result which must be accomplished.

He starts with the thesis that both mills and selling agents are facing a continuation of cut-throat competition, leading eventually to mutual disaster, unless every legitimate method of coordinating the interests and activities of the two groups is utilized.

Naturally, he sees as one possible solution the development of sound mergers in both production and selling so that costs may be reduced and, more important still, the stabilizing influence of large groups be made available.

However, even if the time for such actual consolidations is not ripe, he sees very effective possibilities in the revamping of the relationship between mills and their selling houses. Briefly, he recognizes the necessity of a set-up whereby the profits of each are tied up with the profits of the other. He is thinking, not of control of one by the other, but of a relationship of the nature of a partnership. The mill, he feels, must have a voice in the shaping of merchandising policies, and must participate in the profits of the selling end; similarly, the sales organization must have a voice in shaping the policies of the mill, and an opportunity to share in the profits arising therefrom.

The writer, as he talked with Mr. Gossett, was aware of—and knew that Mr. Gossett was aware of—the many types of existing relationships between mills and selling agents which make the application of the above principle a series of individual problems rather than one clear-cut



> "THE MILL must have a voice in shaping merchandising policies and a share in profits of the selling end;
>
> THE SALES ORGANIZATION must have a voice in shaping mill policies and a share in manufacturing profits."

problem. Nevertheless he was impressed by Mr. Gossett's firm conviction that the immediate application of that principle, varied to suit individual cases, is the most pressing and urgent single job confronting the industry today. Mr. Gossett himself is a director in the company which sells the products of certain of his mills; he has his own office in the New York headquarters of that company; he divides his time between his mills and the selling offices.

False Rumors

The second problem he emphasized is closely linked with the first, since its solution depends upon closer coordination between mills and selling agents. During the price toboggan which has led to the present era of universally disastrous prices, Mr. Gossett has become convinced that much of the acceleration of the decline has come as the result of unfounded rumors and false propaganda. He is not guessing when he says that many brokers, and even many of the mills' own customers, have forced price reductions by circulating incorrect statements regarding prices obtainable in specific quarters of the market. Here, too, he is not blaming any one group or any individuals in a group, but isolating an abuse which must be checked if the entire trade is to dodge ruin.

Also, he does not suggest a specific type of machinery to cope with this problem. He merely knows that mills and selling agents must unite in basing all sales on known facts, so far as the truth can be determined, and not on unfounded and sinister rumors. To this end, he believes that it will be necessary to exchange information to an extent not attempted heretofore—in fact to the legal limit permitted by existing legislative restrictions. He looks for, and hopes for, eventual modification of those restrictions so that the firms which undermine legitimate price structures may be held as culpable as those which profit by undue monopolistic inflation. However, pending such revision, he feels the industry can do much, within the law, to curb its abuses.

He has studied, of course, the plan for a "clearing house" previously proposed by a prominent cloth broker and, although he does not advocate that or any other plan in its detail, he believes the psychology underlying that suggestion is, in general, the attitude which must be acquired by the industry as a whole.

Mr. Gossett, in expressing these thoughts to us, made no claim that he was advancing a new and startling diagnosis of the troubles of the cotton textile industry. On the contrary, he emphasized the fact that leaders in the industry had realized for some time the need of corrective action along the lines indicated above.

However, the phase of the interview that impressed us most strongly was the conviction that here was a call for action. Mr. Gossett, we felt, was issuing that call, not as the head of the American Cotton Manufacturers Association, not as a southerner, not as a manufacturer of specific types of goods—but as a man who saw an emergent need for unity. We left his office without any sense of personalities involved, without any feeling that B. B. Gossett wanted to cure the industry's ills—but with the conviction that the future course of action of the industry itself had been indicated broadly, clearly, and courageously.

OVERCOMING INEQUALITIES IN

Textile Mill Valuations

WITH the subject of taxation in the forefront today, it is fortunate that sounder thinking has been evident of late on the problem of textile mill evaluation for tax purposes. Both mills and assessors have striven to get away from older methods which resembled an acrimonious "horse-trade," with the mills uttering loud but largerly useless cries of despair and the assessors grimly going about the task of getting the last farthing.

Progress in arriving at fair taxes has been particularly evident where the mill and the town have realized their mutual dependence. It is shortsighted both for the town to tax the mill out of existence and for the mill to avoid its fair share to the extent that the burden is shifted to other property and its employees made to pay the difference indirectly. Textile mills cannot expect any preferential treatment as compared with other industries. What an individual mill can and should expect, however, is that its tax be not out of line either with other taxable property or the taxes paid by competitors. For purpose of analysis, cases of needed tax reduction can be divided into two classes:

1. Where the mill pays more than a fair amount of taxes in the town or state.
2. Where the expenditures of the town are so large that all taxes are out of line.

Dealing With Inequalities

Cases falling in Class 1 present, primarily, a problem in evaluating the property and its ability to pay taxes. Unfortunately, it is neither the value of a property, nor the tax rate that determines taxes, but the product of the two. Lowering valuations and raising rates is as useless as lowering rates and raising valuations. It is for this reason that one of the methods used in presenting a case to the assessors might be called the "budget" method.

Under the "budget" plan data are secured on taxes paid by producers in similar lines, particularly those not very distant geographically. Through a study of such data it is found that the mill in question, if it is to be in line with competitors, should pay a certain sum in taxes. This lump sum represents a certain percentage of either the poundage or yardage cost, as the tax load per pound or yard of finished material should be about the same in comparable mills making a similar product. Obviously, type and condition of plant and equipment cannot be disregarded.

A mill that consistently pays higher taxes than competitors must eventually close down if other conditions are equal. It is important to emphasize that good management should not be taxed. There is no excuse for a town insisting upon taxing a mill higher than normally merely because that mill, through superior management, is able to pay.

Mills that are in a healthy financial condition, then, if they believe their taxes too high, can present a case showing that unless taxes are brought in line it will be sound policy on the part of the management to close the mill in question and dispose of it rather than have assets melt away in the form of exorbitant taxes. Some mills have used this argument as a bluff in the past, and assessors have regarded it as such, but the trend at present is for both sides to sit down and talk facts, particularly since there is the example of mills that have been closed primarily because of outrageous taxes.

The problem confronting mills that are in a precarious financial condition is a difficult one. Here it is largely a question of how much the town wishes to give up in the matter of taxes in order to keep the mill running and the workers employed.

Evaluation of Property

Presupposing a fair tax rate, there remains the problem of evaluation. Figures gathered on mill assessments, both North and South, reveal a surprising divergence in certain cases even when mills with similar product and equipment are compared. For example, South Carolina has a uniform State tax of $0.005 but the figures on one group of five mills show an average valuation per spindle of $12.17, while another comparable group of five mills shows a valuation per spindle of $8.67. Such discrepancies are gradually being ironed out. It is to be deplored, however, that there are still cases where local capital is able to exert sufficient political influence so that the "home" mills are let off easily and the "foreign" owned mills are "soaked."

There are usually two extremes in the matter of valuation. The first is the cost of building and equipment, less normal depreciation; and the second is the knock-down auction value. Laws state that taxes shall be levied on the "full, fair, cash value." Such a value lies somewhere between the high of building and equip-

ment less depreciation and the low of auction value, since the first ignores many pertinent factors and the second, particularly in view of the ridiculous prices at which some mills have been sold, does not, in all fairness, represent a true value.

In an endeavor to set up a proper means of valuation, Charles T. Main, president of Charles T. Main, Inc., Boston, presented an interesting paper at the semi-annual meeting of the American Society of Mechanical Engineers, late in June. After pointing out the present situation and the trend in building costs (see chart below), Mr. Main suggested, in part, the following procedure to arrive at a fair compromise on the valuation of buildings:

1. Estimate as closely as possible the replacement cost of the buildings as of April 1, 1932, or for any other date of taxation, using either previous data corrected for construction cost as of the date required, or by direct estimate.

2. Having established a replacement cost for the exact structure or structures under consideration, there may be allowances to be made for obsolescence for the following reasons: (*a*) Because the building was so designed as to cost more than is necessary for the purpose to which it is put; (*b*) Because of changes in methods of operation or of machinery, the buildings may not be now economical for the present occupancy or operation; (*c*) Because of changes in the character of the business or its operation, there may be floor space which no longer is essential to the business and which is not useful for any other purpose.

3. After the foregoing allowances have been made, a figure is arrived at which represents the value of the buildings *if new*, provided they are being used for some useful and remunerative purpose. There is then to be applied: (*d*) Depreciation for age and wear and tear.

4. After this allowance has been made there remains a figure which would be an indication at least of the value of the buildings as they are, provided they are in use for some remunerative purpose.

Item 2, of the above is of particular interest. For example, under (*b*), consider a certain mill building which is not suited for the installation of modern equipment without remodeling. Such a building is worth less than a suitable building; the exact difference being the cost of remodeling. Under (*c*) would come cases where a mill has installed single process pickers, long-draft spinning, etc., with considerable saving in floor space. Unless this space can be utilized it is simply waste space without value.

On the subject of machinery, Mr. Main suggested the following procedure, in part:

1. Estimate as closely as possible the replacement cost as of April 1, 1932, or for any date of assessment.

2. Allow for depreciation due to obsolescence.

3. After the application of the factor of obsolescence, there is to be a further reduction for depreciation due to age, wear and tear, etc.

4. The result obtained represents the value of the machinery as it is, provided it is being employed for some useful and remunerative purpose.

Improvements of late years in opening and picking, carding, long-draft spinning, spooling, warping, slashing, twisting, winding and weaving are cited by Mr. Main as typical illustrations of the effect of obsolescence.

Municipal Expenditures

Perhaps of greater importance than the cases where inequalities can be smoothed out is the wider taxation problem under Class 2 at the beginning of this article. A town needs money to carry on its affairs and property owners must pay taxes to support the town. However, there is the ever-present danger that the town will run up, or maintain, expenditures beyond the ability of its tax-payers to pay. Fall River furnishes an example. When a number of mills liquidated, municipal expenditures were not curtailed sharply enough to balance curtailed income. Higher assessments on remaining mills were a contributing cause to still further liquidation. When mill executives won rebates through litigation the city of Fall River went into a sort of bankruptcy. The example of Fall River, and of Lowell and Lawrence to a lesser degree, has served to deter other towns from such a short-sighted policy.

An editorial in the Lewiston (Me.) *Daily Sun*, April 12, comments, in part, as follows:

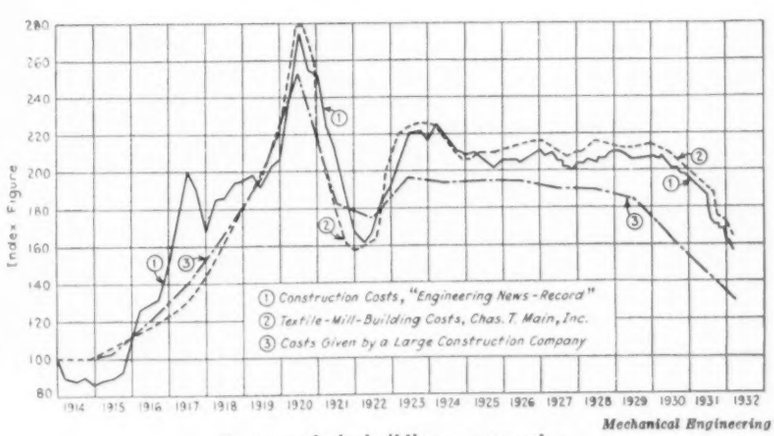
In our own Lewiston textile situation, nothing like the Lowell-Lawrence-Fall River condition has yet developed. But enough has been made public about the condition of our own textile mills to make it very clear that their affairs are critical.

Last year the total tax commitment for the city of Lewiston was, in round numbers, $1,165,000. Of this, the four big Lewiston textile plants paid $286,174, or about one-fourth of the total tax income of the city. If there were added to these the smaller textile plants and the allied industry, the Lewiston Bleachery, it would be found that about one-third of the total tax was paid by the textile industry.

Now, while there is time, the city of Lewiston must take its affairs energetically in hand; it must reduce its expenses materially. We do not want to take any chances of getting into a position where we cannot pay our teachers, our policemen, our firemen, and our other city employees. What if even one of our big industries went out of business and its pay roll and taxes were lost to the city. Lewiston must take its affairs in hand now while there is time. It must reduce materially its expenses.

Towns, as well as textile mills, must budget out-go against income, and the basis on which to work is not loud cries of anguish, but the dispassionate presentation of facts.

In conclusion, the most valuable tools for the manufacturer unfairly taxed are figures showing competitive situation, figures on reasonable valuation of property and data on the economic question of whether the mill may not be better off to close down and either sell or tear down the buildings—with figures on the prices brought at recent sales of mill properties as background material.



Cost trends in building construction

Spinning-Room Records

SIMPLIFIED BY CHART AFFORDING QUICK AND

ACCURATE records of day-to-day operations in the spinning room are of vital importance in the efficient management of any cotton mill. In the average mill, copies of spinning-room reports are kept on a file, nail, or what not, in the overseer's office. Should, for instance, the superintendent or overseer want to obtain some information on breaking strength running over a period of several weeks, he must search through his file of daily reports to get the necessary figures.

The whole question of spinning-room records and reports has been greatly simplified in a large Southern mill by means of a chart such as the one shown in the accompanying illustration (originally on design paper). By means of this chart, as the reader will readily see, the superintendent or overseer has a continuous picture of breaking strength, yarn numbers, relative humidity, and other important factors before him at all times, showing the day-to-day changes. There is nothing difficult about keeping such a chart; and, moreover, it can be read and understood at a glance. This graphic chart may be kept on the wall in the overseer's office.

Explanation of Graph

The illustration with this article represents a graphic chart covering a period of about four months, although the figures shown are not actually those recorded in the mill, because the writer could not release such information without permission from his employer. The figures shown on this chart, however, are representative of actual working conditions found in the average cotton mill.

The top line on the chart, as the reader can see from the explanation and scale on the margin at the left of the graph, shows the yarn numbers as they are recorded in the daily reports of yarn sizings. It will be noted that the middle horizontal line represents 30s yarn and is taken as the base line. It will be observed that on Oct. 22, as indicated on the chart, the yarn numbers were a bit too light and the breaking strength dropped off badly as shown by the line recording breaking strength.

The second line from the top, which is recorded on the original chart with a red pencil, represents the actual breaking strength of 30s yarn. The reader will note that between Sept. 24 and Oct. 20 the breaking strength was higher than the average. This was due to the fact that new-crop cotton was running in the mill at this time, and this cotton being green and containing a considerable amount of moisture resulted in a stronger breaking yarn than that produced the last part of October and into November.

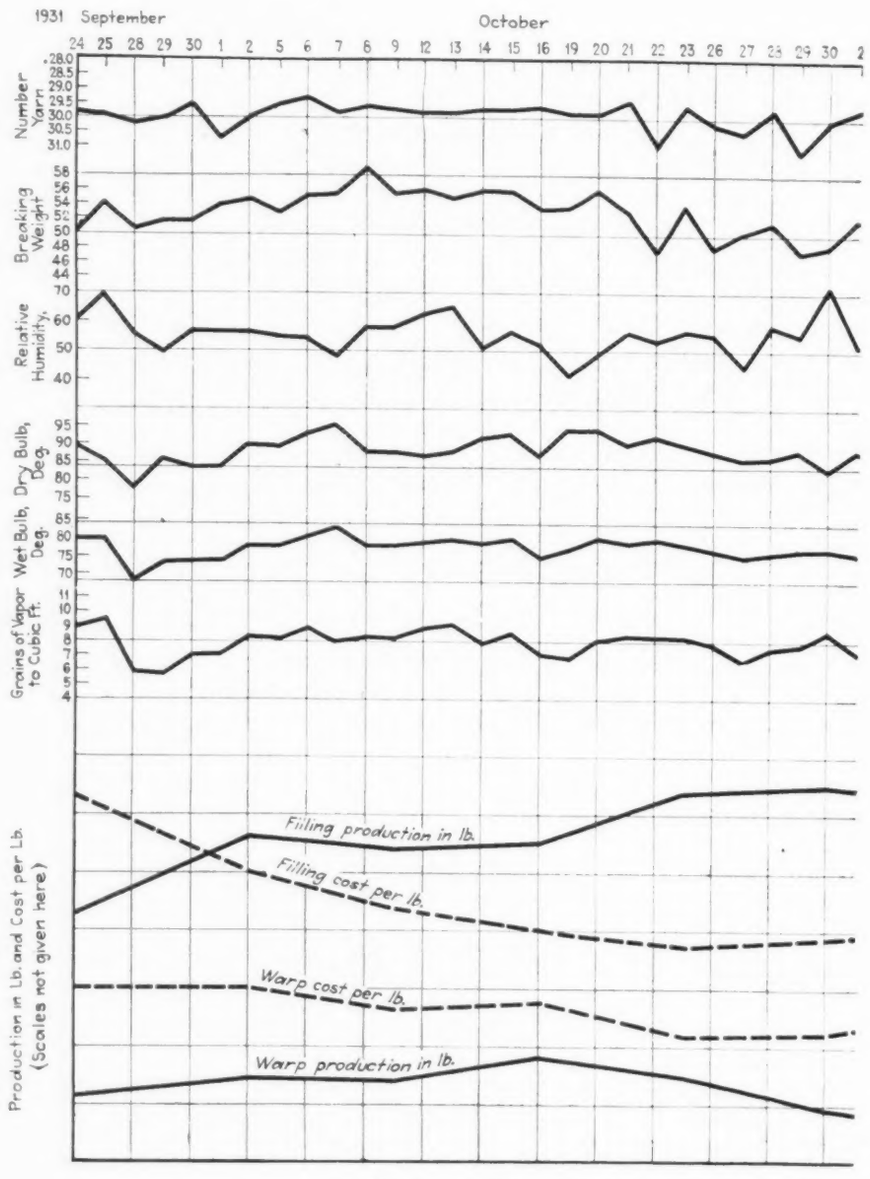


Chart originally on design paper (for clarity

By Joseph C. Cobb
Lancaster (S.C.) Cotton Mills

THOROUGH REFERENCE

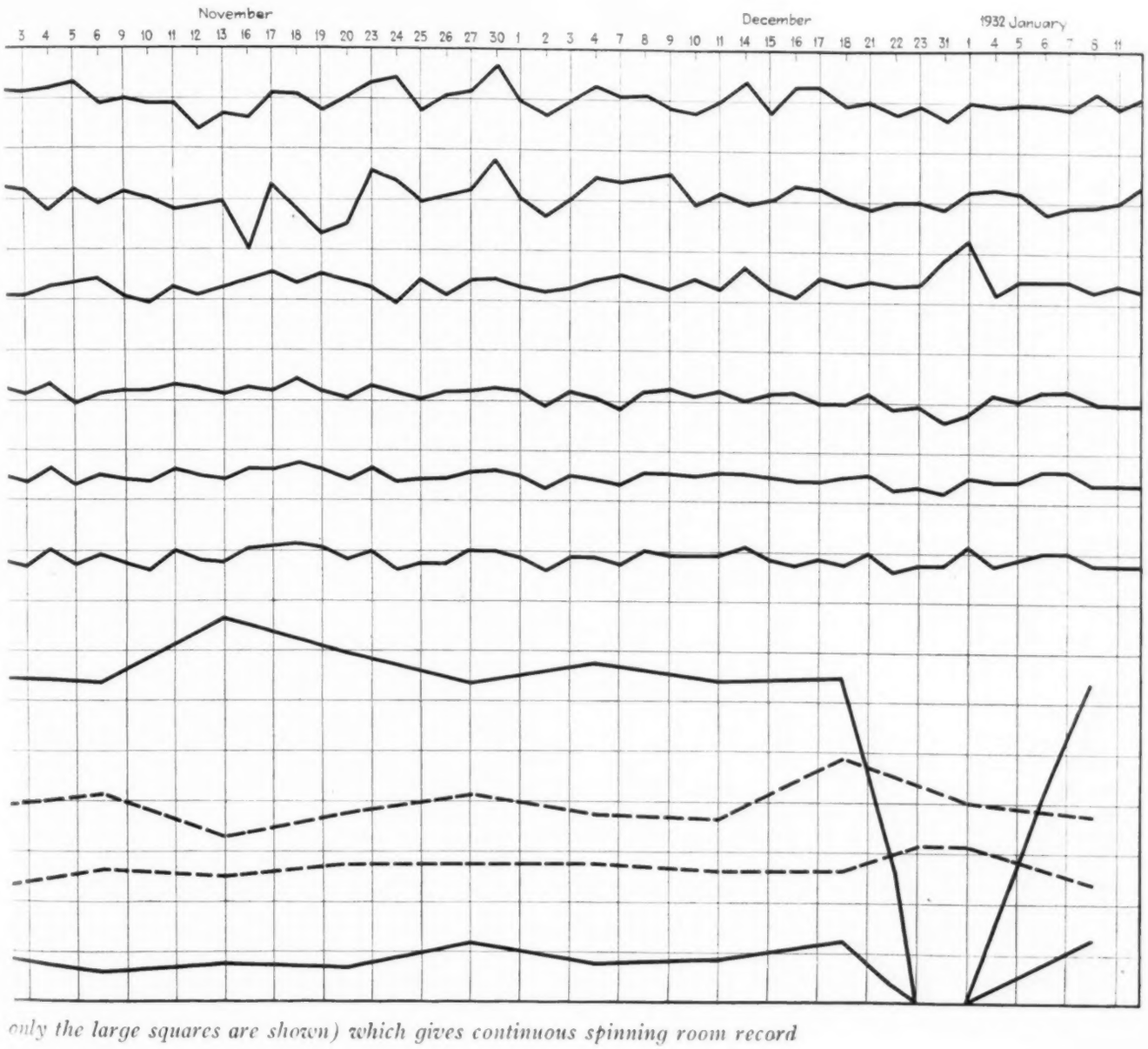
The third line from the top represents relative humidity. This shows a fairly good average; but the reader will notice that, in practically every instance where the relative humidity showed a sharp increase, on that day the dry-bulb thermometer showed a decrease. The fourth line in the chart shows the dry-bulb reading and the fifth line represents the wet-bulb reading. Grains of vapor per cubic foot of air space is recorded and shown by the sixth line on the chart.

Returning again to the method of recording yarn numbers, the middle horizontal line, as mentioned before, is taken to represent 30s yarn. The scale on the margin has been graduated one-half number for each short line (or one-quarter for each square on the original design-paper chart). Therefore, the reader will observe in studying the chart that on Sept. 28 the yarn number was 30.25, on Sept. 29 it was exactly 30, on Sept. 30 it was between 29.5 and 29.75, while on Oct. 1 it went to 30.75.

Breaking strength of 50 lb. is represented by the middle horizontal line in the breaking-strength section. Exactly under the heading of breaking strength the reader will note the scale shows two pounds equals the space between every two short lines (or one equals every square on the original design-paper chart). On Oct. 27, therefore, breaking strength was exactly 50 lb., while on Oct. 28 it was 51.5 lb., or 1½ lb. above the base line.

Production and Cost Figures

Records of the production in pounds and the cost per pound of both filling and warp yarns may be kept at the bottom of the chart. It is advisable to use differently colored pencils in recording this information on the chart in order to avoid possible confusion.



only the large squares are shown) which gives continuous spinning room record

Progress in Half Hose

HAS BROUGHT BOTH DIFFICULTIES AND ADVANTAGES

By H. E. Clayton

Manager, Brown Hosiery Co., Lowell, Mass.

◆ *Innovations now holding the attention of the half-hose trade are discussed by Mr. Clayton. Mesh and pastels have possibilities for sport wear. Garter tops require too many leg sizes. Wrap stripes will increase in popularity. The split foot is obliged to balance quality against low production. The half hose of tomorrow will be more conservative and of better quality.*

A FEW months ago I had the opportunity to walk through one of the knitting rooms of a mill which, in its day, was the largest manufacturer of men's half hose in the country, possibly in the world. In this room were 600 knitting machines, all in good mechanical condition, ready to run and capable of producing 3,000 dozen men's plain half hose a day. The room had not been disturbed from the time it had stopped producing. There were also in the mill several other rooms containing many machines, but none running. Thousands of dollars originally invested were standing idle. Why? Because the trend of style had changed. The plain stocking was no longer the big seller. Fancies had taken their place.

Looking at those machines, one could not help thinking how small was the detail and production worry in those days compared to what it is today, with all the novelties. How good it would seem if we could today get an order for thousands of dozens of a plain sock which we could grind out day after day at a profit. Instead, we consider ourselves fortunate if we can get an order for a few thousand dozen of a pattern before having to change to some other design. How much easier it was to figure costs and increase efficiency. Of course, in those days there were different styles, but all were based on the first principles of knitting; and once a machine was set up on a style, it was very likely to stay on that style for months at a time.

The machines, too. How simply they were adjusted compared to the more modern machines with their pattern drums, double cylinders, and numerous other complications. It is very interesting, and yet pitiful, to have a fixer apply for a job, have him tell you he has been fixing for years, take him out to a section of new machines made by the same manufacturers who made the machines he learned to fix on and see him look at them with awe. He will hardly believe they are basically the same machines with only the addition of a few attachments for making the needles and yarns do things no one thought they could do in the days of plain half hose.

In spite of all the changes which have taken place, the half-hose manufacturer of today probably gets more satisfaction out of his work than did the manufacturer of yesterday—through the pleasure of creating attractive and salable lines.

After the passing of the plain half hose, the vertical-stripe patterns were most common. Many of these patterns were created by either reverse-plating attachments or bent needles. Following these came the horizontal-stripe attachments, by which patterns were made through introducing colored yarns horizontally around the stocking. Combining the vertical patterns with the horizontal, a manufacturer was able to create some very attractive effects and found it possible to get a good price for his goods. Today practically all of the machines with these attachments, if they are running at all, are making very cheap half hose.

After these, we had the thirteen-step spirals and seven-step reverse plate, which were good for a while. And today we have the twenty-five step spirals, the twelve-step reverse plate, and the wrap-stripe machines. The twenty-five step spirals and twelve-step reverse plate gave the manufacturer the opportunity of making patterns and designs which were considered almost impossible several years ago. But here again, newer machines with different attachments have pushed the sale of spirals and thirteen-step patterns into a cheaper class; although there is still some demand for merchandise of this type, which can be made at a profit.

Recent Innovations

The fish-net half hose, made either plain or with a pattern, is an outgrowth of the twenty-five step spiral and the fish-net attachment. While such a stocking is more or less new, and the demand not fully known, there is, however, a feeling that it will be a pretty good seller—particularly for sport wear. And the subject of sport wear brings us another new line—pastels, the socks with white or light-colored top, heel, and toe and with the pattern dyed such colors as maize, Nile green, black, almond brown, and purple. While last season this type of sock was a new venture, it is felt that for sport wear with white flannels it will be a good number. A very good example of price changing from one season to another is illustrated in this type of sock. Last year the pastel was mostly a dollar retailer, while this year attractive lines are being offered to retail for 35c.

The garter-top half hose is another novelty which at its first appearance made manufacturers wonder if such a hose were to be the coming thing for men. In our mill we experimented with these stockings and were quite enthused until a large buyer advised us that to make and

sell such a stocking right it would be necessary to carry the regular foot sizes as well as three different leg sizes for the short, the medium, and the tall man. This meant three times the detail and all that goes with it if we were to make the number. We decided not to; nor did the buyer, so far as we know, get any other manufacturer to make it. For these reasons it is doubtful if there will be any big trend towards the garter-top half hose, although there will no doubt continue to be some made and sold in a higher-priced stocking.

The most recent trend in half hose, and perhaps the one which is bringing us back nearer to the half hose of the past, is the wrap-stripe stocking, or the clock stocking. The ground, or body, is the same as the plain stocking, but clock patterns of silk are knit on to the fabric. Even in the days of plain stockings, there were clocked half hose; but it was an expensive operation and the cost was prohibitive for volume business. The stockings and patterns are very conservative and give one an impression of quality and high-priced merchandise; yet, through the new wrap-stripe machines, such numbers can be sold for a comparatively low price. Whether, as the newness wears away, these stockings will pass by as other fancies have is a question; but if the past is to be a criterion, there is no doubt that they will. However, due to the slower production, thus making the cost necessarily higher, and also the conservativeness of patterns, it is felt that the wrap stripe will be good for a long time and that there will be a trend towards more of such stockings, rather than less.

Left to right: wrap stripe, garter top, fishnet or mesh

Split-Foot Hose

Another interesting trend in today's half hose is in the split foot—the stocking with the plain leg and instep and the lisle sole. This stocking, when first made, was considered a very fine number and was knitted on 240-needle machines. Today the better ones are made on 280- and 300-needle machines. The production on such machines is necessarily rather slow, due to the fineness of the fabric; but the finished stocking is a beautiful piece of fabric. In some mills the stocking is being sent to a commission clocking agent and embroidered clocks are sewed on—a high-priced but genuine-quality sock

It is interesting to consider the yarns used in manufacturing half hose in the day of the plain stocking and in the manufacturing of today. In the old days a few different counts of cotton yarn, either carded, combed, or mercerized, were all that were needed. Today we still have the same cotton yarns, but we also have rayon, acetate, silk, and all the combinations of these which one can think of. Recently a half-hose mill received a very large order on a novelty made by dyeing an acetate yarn three colors, about 8 in. of each color repeating throughout the yarn, and twisting this with a plain rayon yarn. The effect was new at the time and sold well.

What will be the half hose of tomorrow—the plain or the fancy? To the manufacturer it is an interesting and vital question. In my opinion it will be towards conservativeness, going back nearer to the plain than it has been for years, with a demand for greater quality.

Outerwear Convention

MOVES FOR WHOLESALER HARMONY

John Sichel, chairman of the committee on sales and distribution

IMPORTANT progress toward clarification of the distributor-manufacturer relationship in the knit goods field, was made during June by joint action of the National Knitted Outerwear Association and the Wholesale Dry Goods Institute. The steps taken by these organizations have significance for other textile manufacturers who face similar problems and it is possible that the wholesalers may use the plan now pending as a model in future negotiations with other manufacturing divisions.

In an effort to eliminate the practice among manufacturers of quoting parallel prices to wholesalers and to retailers, officers of the Knitted Outerwear Association conferred with representatives of the Wholesale Institute, and each agreed to draft a code presenting the views of the respective organizations as regards the problem. The Institute report was made public early in the current month. The outerwear Association report was submitted at the association's convention, held at the New Yorker Hotel, New York City, June 16. The convention delegates approved the report and subsequently the officers of the organization made plans for a joint meeting of representatives of the two bodies. The aim of this meeting was to go over the reports of both groups, and to coordinate the views of the manufacturers and the sellers, into a code which would be followed mutually. At the end of the month prospects pointed toward early adoption of selling standards which would do much to improve conditions in the outerwear industry.

The Outerwear Association report was submitted at the convention by John Sichel, of Dearnley Bros., Philadelphia, as chairman of the committee on sales and distribution, and it was the outstanding feature of the convention. The report stipulated that the wholesaler should purchase "considerably in advance of the retailer's opening season," orders to be placed when sample requirements are covered; also, the wholesaler must buy in quantities sufficiently large to permit manufacturing economies to the manufacturer, and must accept delivery at an early date, before his season opens.

The report was read at the convention luncheon, at which John F. Stern, publisher, *Knitted Outerwear Age*, presided, and it provoked animated discussion. In his address, Mr. Sichel emphasized that the manufacturer would restrict his sales to the wholesale trade, if the latter group gave the necessary cooperation. The function of the jobber was considered pro and con in remarks by delegates, some asserting that the present trend was toward elimination of the jobber. Herbert Goulder, Federal Knitting Mills, Philadelphia, took exception to this view, declaring that "for the immediate future, at least, the manufacturer needs the jobber"; he added that though the chain store represents an important division, most of the outerwear merchandise is sold to the jobbing group. Herman Heller, president of the Knitted Outerwear Selling Agents Association, declared that a mill cannot sell retailers and jobbers at the same price, and asserted that some manufacturers today quote lower prices to retailers than to jobbers.

Numerous other actions of importance were crowded into the convention's one-day session. "Vicious and unwarranted price-cutting and accompanying reduction in quality by some outerwear manufacturers" was condemned in a resolution offered by Sidney Korzenik, secretary of the Outerwear Association, which was unanimously adopted.

The report of the tariff and legislative committee, submitted on behalf of John J. Phoenix, of Bradley Knitting Co., as chairman, reviewed the progress made toward obtaining greater tariff protection for the industry. The recent revision of the duty on infants' outerwear, which was approved by President Hoover, provided for an increase of 25% ad valorem, on lines of merchandise where competition between the home and the foreign goods had been very acute.

The convention decided in favor of a uniform 1932 fall opening of spring lines. Officers for the ensuing year were elected as follows: Daniel Rheinauer, of New York Knitting Mills, reelected president; Daniel Starr, Starr Knitting Mills, Brooklyn, reelected treasurer; and the following vice-presidents: A. J. Friedlander, M. Friedlander Mfg. Co., Milwaukee, reelected, and Herbert Goulder, Wm. Portner, and Richard Gerrish. The convention concluded with the annual dinner.

FARMER-MILL WORKERS SUGGESTED AT

S.T.A. Meeting

Frank K. Petrea, elected president of S.T.A.

THE coordination of agriculture and industry in the southern states as a means of reducing seasonal unemployment was suggested by Dr. E. W. Sikes, president of Clemson College, in one of the principal addresses at the Southern Textile Association's twenty-fourth annual meeting, held at Hendersonville, N. C., June 24–25. Dr. Sikes described the need for attaining economic stability along with the development of new inventions, by providing certainty of employment, and by the proper utilization of the surplus of products that inventive genius has created.

Frank K. Petrea, superintendent of the Swift Mfg. Co., Columbus, Ga., was elected president of the association in the business session Friday morning. H. H. Iler, of Union Bleachery, Greenville, S. C., was elevated from the chairmanship of the board of governors to the position of vice-president, while Culver Batson, division manager of the Consolidated Textile Corp., Lynchburg, Va., was elected to succeed Mr. Iler in the former capacity. Marshall Dilling, of Gastonia, N. C., was re-elected executive secretary of the association.

New members of the board of government elected at the business session to serve until 1935 were: F. D. Lockman, Lockhart, S. C.; Albert D. Massey, Atlanta, Ga.; B. F. Mitchell, Mount Holly, N. C., and J. O. Edwards, Huntersville, N. C. S. T. Anderson, of Spray, N. C., was elected to fill the vacancy created by the promotion of Mr. Batson to the chairmanship and will serve until 1934.

The adoption of changes in the by-laws of the association, the annual report of Walter C. Taylor, of Charlotte, N .C., secretary and treasurer, and the decision to hold the semi-annual meeting in connection with the Southern Textile Exposition, at Greenville, S. C., Oct. 21, were among the high lights of the business session. S. B. Alexander, southern manager of the Crompton & Knowles Loom Works, of Charlotte, was elected to honorary membership in the association, while Marshall Dilling, of Gastonia, was elected to life membership.

President T. W. Mullen, of Roanoke Rapids, N. C., in his annual address which was delivered Friday morning, urged that the work of the Southern Textile Association be planned with future prosperity in view, and not merely in terms of present economic distress; and that those connected with the operating staffs of cotton mills should overcome the shackles of precedent and adjust their mental attitudes to meet changing conditions. He outlined the plan of reorganizing the work of the association and stressed the importance of taking an active part in its affairs.

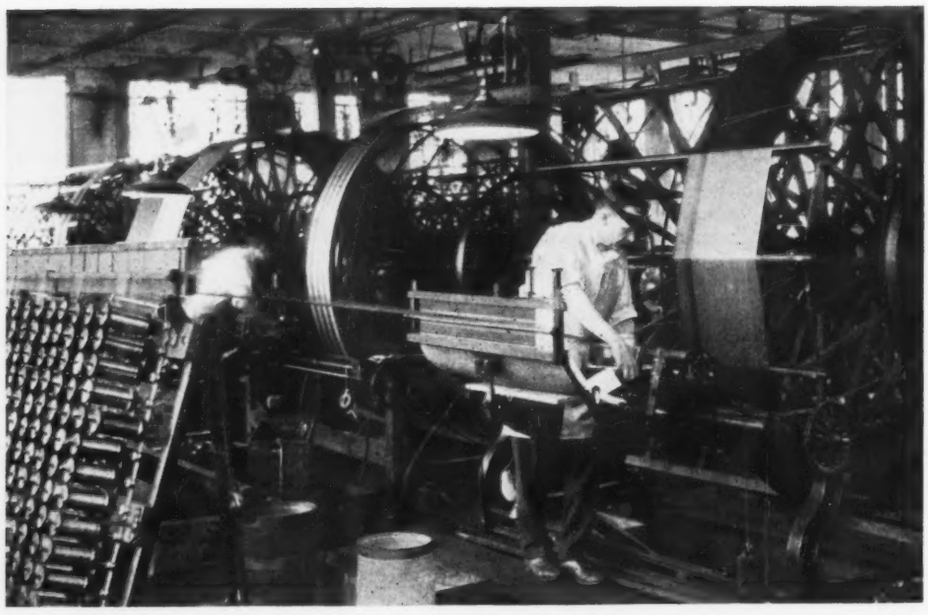
"The suggestion is to combine the stability of agriculture with the instability of industry," Dr. Sikes explained in the course of his address, "to stagger the instability of industry with the stability of agriculture. Can this be done in the South? Land is plentiful, good roads—passable in all seasons—and cheap transportation are convenient; the hours in the plant have been shortened. Let the employee live in his own home, surrounded with a few acres of land; let him produce his own living out of his own acres; let him divide his hours between tending a machine and tilling his few acres. Let one member of the family work on the farm, another work in the mill. Together they can make up the family budget. With this arrangement, if the mill has to close down for lack of orders, the little farm will always have work to be done. Such an employee will never be without work; for him there will never be a bread line."

President Mullen acted as toastmaster at the annual banquet Friday evening. T. H. Webb, president and treasurer, Locke Cotton Mills Co., Concord, N. C., first speaker on the banquet program, praised the cotton mill workers of the South and, relating some of his experiences since beginning work as a sweeper boy in 1886, urged members of the association to devote their attention to the elimination of all unnecessary waste in cotton manufacturing.

Marshall Dilling, president of The Arkwrights, presented a medal to David Clark, of Charlotte, N. C., editor of the *Southern Textile Bulletin*, as an emblem of full membership in the Arkwrights. Golf prizes, presented to the successful contestants by Junius P. Smith, chairman of the golf committee, were won by N. G. Hardie, Westminster, S. C. (first low net); Stanley Converse, Clifton, S. C. (first low gross); Claude Iler, Greenville, S. C. (first low net for associate members); and J. M. Alexander, Gastonia, N. C. (first low gross for associate members). Other prizes were awarded to T. W. Mullen, W. B. Uhler and A. C. Kimbrill. The convention ended with the Saturday morning session at which two interesting addresses were heard. Major Heyward Mahon, of Greenville, S. C., in an inspirational talk dealing primarily with the subject of young men and boys, urged textile manufacturers to organize boys' and girls' work in their mill villages. A. E. Jury, agent, Winnsboro (S. C.) Mills, delivered a talk on "Village Maintenance and Beautification" which appears elsewhere in this issue.

Balancing the Budget

IN SILK AND RAYON THROWING



Overseer-cooperation on costs pays dividends

TO ALL textile mill executives who within the past year have been called upon to cut their production costs to the bone: Have you realized that the two main items of expense in any plant—labor and supplies—are directly in the hands of your key men, the overseers? Granting you realize that your overseers are responsible for the bulk of your expenses, what are you doing to supervise or control this expenditure? Granting also that your overseers are as capable and economical as you yourself, bear in mind that you have cut their salaries and wages along with the rest of your personnel and that this condition is not conducive to extreme loyalty.

Payroll Budgeting

The writer has been able, with the whole-hearted cooperation of his organization, to install a system of payroll budgeting which is paying dividends each week in the form of payroll savings, particularly where less than 100% operation has heretofore meant a continuation of full non-productive or overhead labor. While this payroll budget is in operation in a silk and rayon throwing and weaving mill of 30,000 spindles and 200 looms, it can well be applied with profit to plants of any size or kind. In fact, it is now proving its worth in a cotton finishing plant.

Budgeting of course is not new, but in this case we have applied it to each overseer's department payroll and his weekly production. Thereby the mill manager is given an opportunity to determine which department is running over a pre-determined labor cost per unit (pound, yard, 1,000 picks). Each overseer, likewise, is enabled to analyze his payroll and production in order that he may eliminate a possible excessive payroll the following week. The pre-determined labor cost per unit of each size or quality, multiplied by the production of each size or quality will result in a theoretical payroll. Compare this departmental theoretical payroll with the actual and you will be amazed at the savings possible even in departments now being run economically.

The first step in the installation of this system is the complete segregation of each department's payroll. To a great extent this segregation has been in effect for many years in all well-managed plants. We have merely completed the split-up of our payroll by assigning every employee, from janitor to superintendent, to a definite department. This step was taken in order that our total theoretical payroll might be compared with our total actual payroll, thereby giving us a true picture of the payroll excess or saving for the week for the entire plant, as well as for each individual department.

Distribution of Overhead

We have gone one stage further with this payroll segregation. Where an individual department (such as a large weave room) warrants it, we have split the payroll so that we can determine the totals paid for fixing, battery hands, weavers, and weaving overhead. This last should include all weave-room employees (such as overseer, second hand, sweeper, etc.) who cannot logically be included in the first-mentioned sub-

By Abraham Weiss

AND WEAVING

divisions. It should be borne in mind that in all departments other than a large weave room the overseer's wages should be included in the departmental payroll. Furthermore, if one overseer has charge of more than one section, his pay should be split equitably between the departments over which he has control.

Departmental Set-Up

The following is a list of the departments as set up in our plant:

Throwing Plant—(1) Soaking and Drying, (2) Winding, (3) 5-B, (4) Spinning, (5) Rewiring Flyers, (6) Redraw, (7) Inspecting and Shipping, (8) Office, and (9) Maintenance.

Weaving Mill — (1) Soaking and Drying, (2) Spooling, (3) Quilling, (4) Direct Warping, (5) Horizontal Warping, (6) Slashing, (7) Entering and Twisting, (8) Weaving Overhead, (9) Fixing, (10) Battery Hands, (11) Weavers, (12) Inspecting and Shipping, (13) Office, and (14) Maintenance.

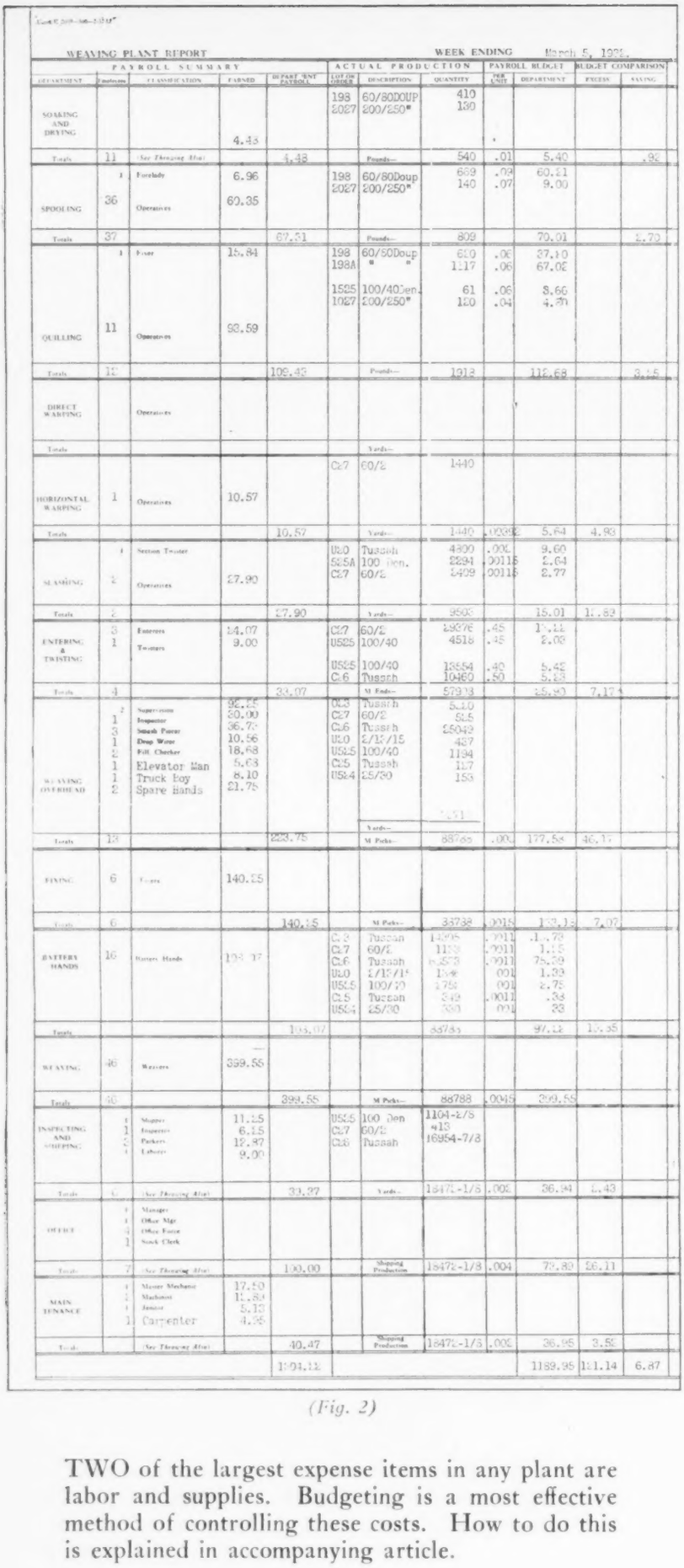
This set-up with slight variations to suit individual mill conditions can be used in any similar manufacturing plant, while for others a suitable arrangement can easily be worked out. The soaking and drying department in our mill includes the receiving of raw silk and rayon. The inspecting and shipping department, for reasons peculiar to our plant, includes the cloth room. The office includes the factory manager; and maintenance includes the master mechanic, electrician, machine shop, and others of such nature who serve the plant as a whole.

We are now ready to determine what cost figures to use as a basis for budgeting the payroll. Naturally the first reaction would be to use the figures which our experience and various cost systems have taught us, but at their best these figures show what the cost *has been* and not what the cost *should be*. In our opinion the best method to determine the departmental budget figures is to furnish each overseer with a list of all the sizes, qualities, styles, and yarns which his department will ever be called upon to

THROWING PLANT REPORT — **WEEK ENDING 4/23/32**

DEPARTMENT	PAYROLL SUMMARY: Employees	CLASSIFICATION	EARNED	DEPARTMENT PAY ROLL	ACTUAL PRODUCTION: LOT	DESCRIPTION	POUNDS	PAY ROLL BUDGET: PER LB.	DEPARTMENT	BUDGET COMPARISON: EXCESS	SAVING
SOAKING AND DRYING	1	Supervision	22.00		219	3/40/60	1712.41				
	1	Soaker	14.20		220	3/13/15	126.29				
	1	Helper	11.96		229	3/14/16	1088.25				
	8	Dryers	69.23		230	2/20/22	261.69				
			117.79		232	2/20/22	264.65				
					234	3/14/16	2157.07				
		Deduct for weaving	19.47		237	3/40/60	95.00				
			98.32		238	3/13/15	262.00				
					239	3/14/16	316.00				
					240	3/20/22	1357.50				
					241	3/20/22	945.40				
					244	3/14/16	965.69				
					681	80 D.B.	89.65				
					682	100D.B.	15.40				
					683	100D.B.	1524.60				
					684	100D.B.	1320.00				
Totals		(See Weaving Also)		98.32			12401.50	.01	124.02		25.70
WINDING	1	Supervision	35.00		160-B	Tussah	63.00	.12	7.56		
	1	Forelady	17.00		213	3/13/15	400.81	.09	36.07		
	1	Fixer	14.80		218	3/14/16	50.00	.09	4.50		
	2	Bobbin Boys	21.44		219	3/40/60	1901.00	.12	228.12		
	1	Rewinder	6.48		220	3/13/15	301.29	.09	27.11		
	1	Elevator Man	12.50		225	3/13/15	135.00	.09	12.15		
	2	Assembling swifts	18.98		226	4/13/15	335.04	.09	30.15		
					229	3/14/16	2092.25	.09	188.31		
					230	2/20/22	154.69	.06	9.25		
					231	2/20/22	155.42	.06	9.33		
					232	2/20/22	280.70	.06	16.80		
					234	3/14/16	1057.90	.09	95.13		
					237	3/40/60	30.00	.12	3.60		
					238	3/13/15	12.60	.09	1.08		
					240	3/20/22	765.00	.06	45.90		
					241	3/20/22	1290.00	.06	77.40		
					244	3/14/16	650.50	.09	58.55		
	144	Winders	806.51		681	80 D.B.	956.00	.05	47.80		
					682	100D.B.	1279.00	.04	51.12		
					683	100.D.B.	440.00	.04	17.60		
					684	100D.B.	246.40	.06	14.78		
Totals			929.07	929.07			12593.40		982.31		53.24
5-B	1	Supervision	35.00		200	SS Comb.	15.00	.20	3.00		
	2	Fixer 2	30.47		201	3/40/50	926.98	.06	55.62		
	1	Bobbin Boy	7.65		213	3/13/15	356.00	.06	21.36		
		Rewinder			218	3/14/16	1481.85	.06	88.91		
	3	Doffers	25.76		219	3/40/60	2400.00	.06	144.00		
	1	Teacher	20.00		220	3/13/15	454.00	.06	27.24		
					223	3/13/15	367.99	.06	22.08		
					224	3/13/15	1262.68	.06	75.76		
					225	3/13/15	200.00	.06	12.00		
					226	4/13/15	360.00	.06	21.60		
					227	2/20/22	1250.00	.06	75.00		
					229	3/14/16	1775.00	.06	106.50		
					230	2/20/22	120.00	.06	7.20		
					231	2/20/22	505.00	.06	30.30		
	60	Operatives	568.09								
Totals			686.97	686.97			11474.50		690.57		3.60
SPINNING (Day & Night)	2	Supervision	68.00		201	3/40/50	929.25	.055	51.11		
	1	Fixer	15.40		213	3/13/15	917.00	.055	50.44		
	1	Oiler	10.24		218	3/14/16	1190.21	.055	65.46		
	2	Doffers	19.85		219	3/40/60	2536.00	.055	139.48		
	1	Trucker	14.09		220	3/13/15	207.00	.055	11.39		
					222	3/13/15	612.75	.055	33.70		
					223	3/13/15	660.99	.055	36.35		
					224	3/13/15	450.88	.055	24.80		
					225	3/13/15	249.00	.055	13.70		
					226	4/13/15	409.00	.055	22.11		
					227	2/20/22	324.00	.055	17.82		
	52	Spinners	687.10		229	3/14/16	1400.79	.055	77.04		
					231	2/20/22	981.60	.055	53.95		
					233	1/40/42	8.50	.055	.47		
					662	100 D.D.	100.00	.055	5.50		
					663	100 D.D.	600.00	.055	33.00		
					680	100 D.V.	938.00	.055	51.59		
					682	100 D.B.	200.00	.055	11.00		
					234	3/14/16	1001.00	.055	55.05		
Totals				814.47			13648.57		750.56	64.01	
REWIRING FLYERS	3	Winders	24.84								
Totals				24.84			13648.57	.002	27.30		2.46
RE-DRAW	1	Supervision	45.00		215	3/13/15	1100.00	.06	66.00		
	1	Fixer	22.58		216	3/13/15	730.00	.06	43.80		
	1	Strander	9.95		219	3/14/16	1025.85	.06	61.55		
					219	3/40/60	2464.00	.06	147.84		
					220	3/13/15	1450.00	.06	87.00		
					221	3/13/15	450.00	.06	27.00		
					222	3/13/15	925.75	.06	55.55		
					223	3/13/15	464.00	.06	27.84		
					224	3/13/15	530.00	.06	31.80		
					225	3/13/15	240.00	.06	14.40		
					226	4/13/15	530.00	.06	31.80		
					227	2/20/22	660.00	.06	39.60		
					231	2/20/22	60.00	.06	3.60		
	60	Operatives	599.88		233	1/40/42	8.50	.06	.51		
					236	3/13/15	340.00	.06	20.40		
					677	150 D.V	720.00	.04	29.80		
					682	100 D.B.	410.00	.06	24.60		
Totals			677.39	677.39			12108.10		712.09		34.70
INSPECTING AND SHIPPING	1	Shipper	20.00		156	2/20/22	1247.38	.005			
	1	Inspector	9.00		189	3/14/16	1296.50	.005			
	2	Packer	8.50		232	2/13/15	253.27	.005			
	1	Laborer	7.81		212	3/13/15	626.94	.005			
					213	3/13/15	132.54	.005			
					219	3/40/60	2120.05	.005			
					220	3/13/15	1694.79	.005			
					221	3/13/15	822.41	.005			
					225	3/13/15	29.81	.005			
					226	4/13/15	331.38	.005			
					227	2/20/22	148.44	.005			
					229	3/14/16	1965.22	.005			
					233	1/40/42	9.81	.005			
					234	3/14/16	77.80	.005			
					236	3/13/15	209.85	.005			
					682	100 D.B.	137.16	.005			
Totals		(See Weaving Also)	45.31	45.31			11148.66		55.74		10.43
OFFICE	1	Manager									
	1	Office Mgr.									
	2	Office Force									
	1	Stock Clerk									
Totals		(See Weaving Also)		114.75		Shipping Production	11148.66	.01	111.49	3.26	
MAINTENANCE	1	Master Mechanic	20.00								
	1	Mechanic									
	1	Janitor	7.00								
Totals		(See Weaving Also)		33.00		Shipping Production	11148.66	.005	55.74		22.74
				3424.32					3589.92	67.27	152.87

(Fig. 1)



WEAVING PLANT REPORT — WEEK ENDING March 5, 1932

DEPARTMENT	PAYROLL SUMMARY: Employees	CLASSIFICATION	EARNED	DEPART'MT PAYROLL	ACTUAL PRODUCTION: LOT OR ORDER	DESCRIPTION	QUANTITY	PAYROLL BUDGET: PER UNIT	DEPARTMENT	BUDGET COMPARISON: EXCESS	SAVING
SOAKING AND DRYING			4.43		198 2027	60/80DOUP 200/250"	410 130				
Totals	11	(See Throwing Dept.)		4.43		Pounds--	540	.01	5.40		.92
SPOOLING	1 36	Forelady Operatives	6.96 60.35		198 2027	60/80Doup 200/250"	669 140	.09 .07	60.21 9.00		
Totals	37			67.31		Pounds--	809		70.01		2.70
QUILLING	1 11	Fixer Operatives	15.84 93.59		198 198A 1525 1027	60/80Doup " 100/40Jen. 200/250"	600 1.17 61 120	.06 .06 .06 .04	37.10 67.02 3.66 4.80		
Totals	12			109.43		Pounds--	1918		116.68		8.15
DIRECT WARPING		Operatives									
Totals						Yards--					
HORIZONTAL WARPING	1	Operatives	10.57		C27	60/2	1440				
Totals				10.57		Yards--	1440	.00382	5.64	4.93	
SLASHING	1 2	Section Twister Operatives	17.90		U20 525A C27	Tussah 100 Jen. 60/2	4800 2294 2499	.002 .00118 .00118	9.60 2.64 2.77		
Totals	3			17.90		Yards--	9593		15.01	11.89	
ENTERING & TWISTING	3 1	Enterers Twisters	14.07 9.00		C27 U525	60/2 100/40	2987E 4518	.45 .45	13.44 2.03		
					U525 C26	100/40 Tussah	13854 10460	.40 .50	5.45 5.23		
Totals	4			23.07		M Ends--	57903		26.20	7.13	
WEAVING OVERHEAD	2 1 3 1 2 1 1 2	Supervisors Inspector Smash Fixer Drop Wire Fill Checker Elevator Man Truck Boy Spare Hands	92.25 30.00 36.72 10.56 18.68 5.63 8.10 21.75		C23 C27 C26 U20 U525 C25 U524	Tussah 60/2 Tussah 2/13/15 100/40 Tussah 25/30	5.10 515 25043 487 1194 117 153 7431				
Totals	18			223.75		Yards-- M Picks--	88765	.002	177.53	46.17	
FIXING	6	Fixers	140.25								
Totals	6			140.25		M Picks--	33738	.0015	133.13	7.07	
BATTERY HANDS	16	Battery Hands	103.37		C23 C27 C26 U20 U525 C25 U524	Tussah 60/2 Tussah 2/13/15 100/40 Tussah 25/30	12005 1153 [illegible] 1598 2758 849 380	.0011 .0011 .0011 001 001 .0011 001	1.78 1.15 75.29 1.93 2.75 .84 23		
Totals				105.07			88783		97.12	10.35	
WEAVING	46	Weavers	399.55								
Totals	46			399.55		M Picks--	88788	.0045	399.55		
INSPECTING AND SHIPPING	1 1 3 1	Shipper Inspector Packers Laborer	11.25 6.15 12.87 9.00		U525 C27 C26	100 Jen 60/2 Tussah	1104-2/8 415 16954-7/8				
Totals	6	(See Throwing Dept.)		39.27		Yards--	18472-1/8	.002	36.94	2.43	
OFFICE	1 1 4 1	Manager Office Mgr. Office Force Stock Clerk									
Totals	7	(See Throwing Dept.)		100.00		Shipping Production	18472-1/8	.004	73.89	26.11	
MAINTENANCE	1 1 1 1	Master Mechanic Machinist Janitor Carpenter	17.50 11.89 5.13 4.95								
Totals		(See Throwing Dept.)		40.47		Shipping Production	18472-1/8	.002	36.95	3.52	
				1194.12					1189.95	131.14	6.87

(Fig. 2)

TWO of the largest expense items in any plant are labor and supplies. Budgeting is a most effective method of controlling these costs. How to do this is explained in accompanying article.

run. He is then requested to state what he believes is a fair labor cost per unit (pound, yard, 1,000 picks) for his department for each of the numbers listed should he be required to operate 100% on any single number. He should be instructed to include in his estimate costs all the labor in his department, as well as his own pay. In short, he should answer the question: What is the lowest possible labor cost at which your department can run in order that we may be enabled to accept business under existing conditions?

These cost figures or estimates, if you will, are virtually the overseers' promises of performance. They should be carefully analyzed by the management for correction of those figures which are too high and those which are obviously impossible of fulfillment. The very nature of these unit costs insures a degree of economy and cooperation on the part of your key men impossible to gain with other methods.

The preliminary work having been accomplished, let us proceed with the preparation of a weekly report as outlined in the third paragraph of this article. A summary of each department's payroll is placed under its proper heading. The departmental production for the week, itemized of course, is then listed on the report. Fill in the corresponding unit costs, and the theoretical payroll for each department is easily determined. Forms suitable for recording this information are shown in Figs. 1 and 2.

The writer could go on indefinitely extolling the virtues and benefits to be obtained with this plan, but it is apparent that a weekly comparison of the theoretical (promised) payroll with the actual is sufficient to keep each overseer continually on the alert to prevent in his department the invisible losses which drain plant resources.

The corollary to this payroll budget is a supply budget on a monthly basis which in comparison with actual consumption will serve as a check on all supplies from picker sticks to chemicals and dyes. The author believes that this outline is sufficiently clear to enable other manufacturers to work out similar systems adapted to their particular needs, but he will be glad to answer through TEXTILE WORLD any questions concerning the budgeting of payrolls which are not covered in the present article.

Direct from Scotland

AN INTERESTING NOVELTY WOOLEN

By George R. Stevens

THE weave for an interesting heavy fabric which came directly from the fancy woolen district of Scotland is shown in Fig. 1. The fabric itself is shown in Fig. 2, and in Fig. 3 may be seen the novelty yarns from which it was made. It will be noted that the construction is rather odd with respect to both the weave and the assortment of yarns used.

It seems to the writer that this fabric resulted from someone laying out a conglomerate pattern of odd yarns. We have known of such odd styles occasionally creating a furore as a novelty; and whether this pattern turns out to be an accepted innovation or just a plain dud no one can foretell. Someone may get a new idea from the yarns, however, and an acceptable novelty may result.

The writer understands that the blotch yarn is made by pulling out part of the wire in the doffer rings in such a way that narrow sections are made at regular intervals, separated by sections of full width. The bottom rings are spaced to alternate with the top rings, so that the card doffer is kept clear of wool. It has been suggested to me that, "if possible," the sections be staggered somewhat so as to make the blotches more irregular. A much more simple method has also been suggested; i.e., that one tooth in a drive gear be broken out in order that the doffer will stop for brief intervals and allow the stock to pile up to form the heavy bunches. No doubt a carder will readily get the idea and will, I hope, govern himself accordingly.

A fancy pattern for women's coatings, which did not come directly from the same source as the pattern just described, is shown in Fig. 4, with its weave in Fig. 5. As shown it is made in heavy yarns, but it can be made in finer yarns for fall or spring.

Many bright and snappy color combinations can be made in this weave, and possibly a liberal mixture of bright colors dyed on silk "noils" would bring out some very rich effects. Possibly fancy mixtures of mohair noils would be equally good. The writer has used fancy colors in silk noils running as high as 25% in the total—for example, 8% white, 7% blue, 5% orange, 5% green, and the remaining 75% white wool and wool garnett—and the resultant mixture has not proved over strong. A good deal depends, however, upon the background.

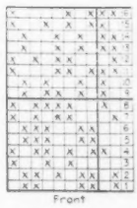


Fig. 1. Weave for fabric in Fig. 2

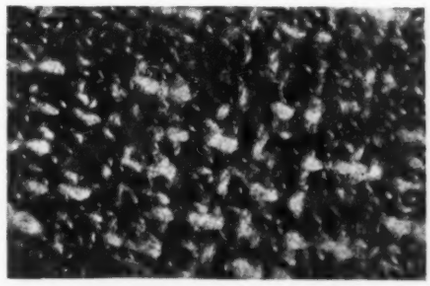


Fig. 2. Novelty fabric from Scotland

The dressing pattern is as follows:

1 black and red twist, 3-run, medium twist
1 soft blue gray blotch twisted with 1 white, 3-run, soft twist
1 brownish gray mix, 3-run, 2-ply, medium twist
1 black and white, 3-run, 2-ply, medium twist
1 brownish gray mix, 3-run, 2-ply, medium twist
1 soft blue gray blotch twisted with 1 white, 3-run, soft twist
1 black and red twist, 3-run, medium twist
1 soft blue gray blotch twisted with 1 white, 3-run, soft twist
1 brownish gray mix, 3-run, 2-ply, medium twist
1 black and white, 3-run, 2-ply, medium twist
1 soft blue gray blotch twisted with 1 white, 3-run, soft twist
1 brownish gray mix, 3-run, 2-ply, medium twist
1 soft blue gray blotch twisted with 1 white, 3-run, soft twist
1 black and red twist, 3-run, medium twist
1 soft blue gray blotch twisted with 1 white, 3-run, soft twist
1 brownish gray mix, 3-run, 2-ply, medium twist

16 threads

The filling pattern is as follows:

1 brown blotch twisted with 3-run white, slack
2 black and white 3x3-run twist, medium
1 white blotch twisted with 3-run white, slack
1 black and white twist, 3 run, medium
1 brown blotch twisted with 3-run white, slack
2 black and white 3x3-run twist, medium
1 white blotch twisted with 3-run white, slack
1 black and white 3x3-run twist, medium

10 picks

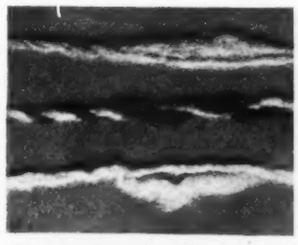


Fig. 3. Novelty Yarns from fabric in Fig. 2

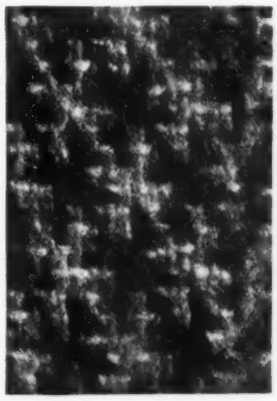


Fig. 4. Woman's coating

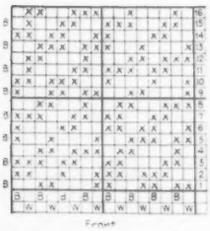


Fig. 5. Weave for fabric in Fig. 4

Textile Industry Rebels

AGAINST "MADE-CHEAP-SELL-CHEAP" POLICY

QUALITY MOVE SEEN INSPIRED BY PUBLIC REVULSION TO PRICE
Realization That Market Getting Bare of Good Is Cheaper Than Can Be for Less Than Others Cited.
CHICAGO FIRMS PLAN TO FEATURE QUALITY
New Cloths Scheduled for Early Fall Rayon Under-
Viscose Will Exhibit Quality Merchandise At Retail Convention
PUTS QUALITY FIRST IN STORE OPERATION
Sibley Lindsay & Curr Shows Gain in Dollars and Units for First Quarter of 1932
CROWN NEWS
The Quality Movement in Merchandise
Address before the 21st Annual Convention of the Massachusetts Laundryowners' Association, April 1st, 1932
Curtailing Production Until Quality Textiles Are Wanted Seems to Be Very Wise Policy
Massachusetts Restrictive Legislation Underlies Lack of Confidence Expressed by Investors in Mills That Have Been Well Managed—Public Sentiment Has Been Misled
Quality League to Act
"Starter"

THE textile industry is in rebellion against the debasement of merchandise. A cry for quality, to offset the menace of cheap and inferior products, comes alike from manufacturer, distributor and consumer. This sentiment is something more than an expression from leaders in the industry, more than group or association action. True, it is being crystallized by organized effort, but its significance is broader and deeper than any one group. The demand for a trading-up in textile manufacture comes from those at the very roots of business—the salesmen on the road, the small jobber and retailer, and the ultimate consumer.

In the last analysis it traces back to popular resentment against inferior merchandise. Refusal by the consumer to be sold on price alone is arousing the industry to action, and today we see on every side signs of a rising trend toward quality.

But the task of restoring consumer confidence in textiles is not so easy as it sounds. The industry faces the problem of eliminating manufacturing policies which have won widespread acceptance since the depression. "Make cheap and sell cheap" has been the slogan, and few divisions of the industry have escaped it.

Widespread Debasement

Broadsilks have been debased; hosiery has been debased. The demoralization of the rayon underwear fabric industry is too well known to need more than mention. These groups possibly are the worst offenders. Cotton goods have held up fairly well. There have been weak spots in the wool goods division—especially during the last year—but this group has not yielded to inferiority without sturdy resistance. Knitted outerwear, which has shown little debasement, now is menaced by certain rayon underwear fabric knitters who, having wrecked that market, are turning to manufacture of low-grade rayon outerwear.

A study of the comparative positions of the different divisions as regards debasement reveals one striking point: Where there is intelligent and general curtailment, there is no drastic collapse of quality in goods manufactured. The greatest flood of inferior merchandise is found in the divisions which produce recklessly and without regard for actual demand.

Today, however, we find a new mood stirring in practically all divisions. During the last two months, the word quality has come out from its hiding-place to assume real meaning. The trade shows unmistakable signs of realizing the danger of manufacturing cheaper and ever cheaper merchandise.

The movement has found concrete expression in several ways. Formation of the National Quality Maintenance League, under the auspices of Julius Forstmann, of Julius Forstmann and Co., was a signal development. Indeed, the League is taking root so fast it may prove the major force in crystallizing quality opinion. This organization which has as its aim the revival of quality consciousness among manufacturers, distributors and consumers alike, has rallied to its standard leaders in all divisions of textile manufacture, and also those in retail and dress trade groups. Manufacturers of gloves and of hosiery joined forces with the League recently and began planning strong propaganda in their respective industries. One of the major steps projected by the League is a nation-wide radio campaign to bring home to both consumer and manufacturer, the false economy of inferior goods sold on price alone.

Rebellion Manifest

Signs of rebellion are manifest on all sides. With certain divisions of knitted rayon underwear in disrepute among consumers, due to sleazy construction of fabrics, rayon yarn producers face a problem so acute and threatening that they are considering the feasibility of manufacturing underwear fabrics themselves.

In the retail trade, the issue has eclipsed practically all other questions of the moment. P. A. O'Connell, president of E. T. Slattery Co., Boston, and president

of the National Retail Dry Goods Association, declared that "the stampede for price buying and the accumulation of cheap, inferior merchandise by consumers during the past two years has resulted in about as much extravagance as the wildest buying orgy."

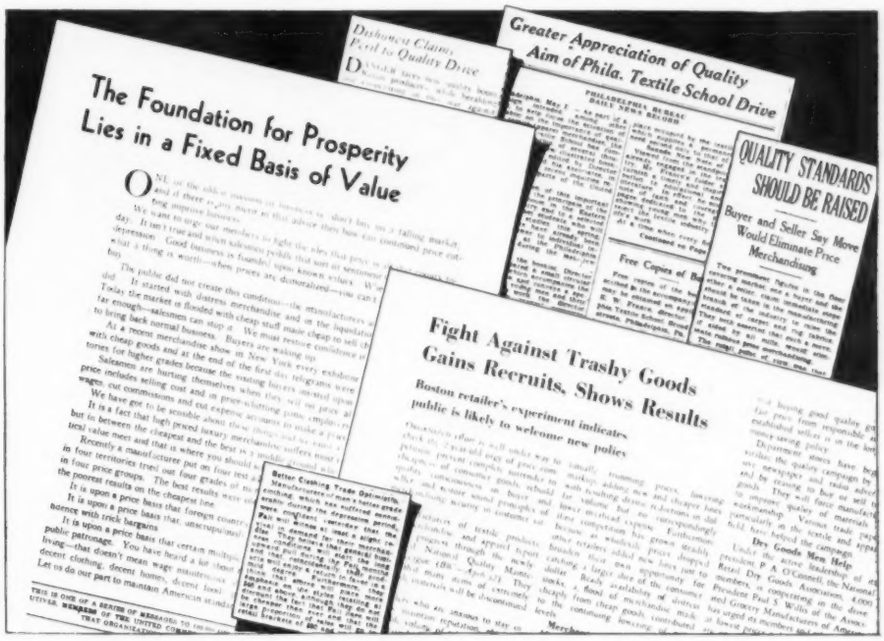
In this statement, Mr. O'Connell epitomized the whole problem. It is a vicious circle. Weavers, eager to meet the price market, make goods that will not wear. Clothiers throw it together with inferior workmanship, solicitous only about the styling of their lines.

Retailers who have built reputations for quality are wrecking these reputations in a few months by offering inferior merchandise; this trend, however, has been materially offset by the widely-approved plan of R. H. Macy & Co., New York, to advertise no merchandise which does not meet the standards of the store's laboratory.

The call for quality is a recognition of the danger underlying the tendency toward inferior output. It is not an organized movement, in the true sense; it is a deep and far-reaching force—more of a feeling than a movement.

Salesmen share it. The United Commercial Travelers, an organization of 100,000 traveling and city salesmen, made quality the theme of a recent message to its membership, stressing the thought that salesmen should sell on wear and true value, not on price.

Bank groups share it. Financial backers of textile companies now are watching with especial care the quality of merchandise manufactured by their clients.


Greater Appreciation of Quality Aim of Phila. Textile School Drive
The Foundation for Prosperity Lies in a Fixed Basis of Value
QUALITY STANDARDS SHOULD BE RAISED
Buyer and Seller Say Move Would Eliminate Price Merchandising
Fight Against Trashy Goods Gains Recruits, Shows Results
Boston retailer's experiment indicates public is likely to welcome new policy

Quality is in the air. It has become the favorite theme wherever textile manufacturers or distributors meet. The peril of catch-penny manufacture is being recognized and firms who, prior to the depression debacle, were quality houses, now are making a valiant effort to reinstate their original standards.

Educator Urges Quality

In the educational field also, the importance of quality in apparel is emphasized. A new booklet compiled by E. W. France, director of the Philadelphia Textile School, is being distributed to educational leaders throughout the country.

Most of these developments, however, are in the upper strata. Let us see what is happening down in the ranks. Retail clerks in a Boston store have discovered that they can get customers to pay a higher price for merchandise when the article is sold on quality. The store staged a trade-up contest in which reward went to the clerks who averaged highest in dollar value of individual sales. The contest proved one big point: When sales effort concentrates on quality, and the article is obviously better, the customer usually will pay the higher price for it.

A pronounced consumer trend to quality is evident in the hosiery field. Often trade buyers have difficulty in getting merchandise that will come up to their standard, which would seem a definite indication that the call for quality originated with the consumer. Sometimes, however, it is the manufacturer who insists on holding to quality, despite pressure for debasement on the part of the buyer. One Pennsylvania knitter of cotton and rayon underwear was asked recently by numerous buyers to cheapen his line so that it might be sold at a lower price than the mill was quoting. He answered that he would be willing to knit a slightly coarser garment of cheaper yarn, provided the purchaser supplied a label.

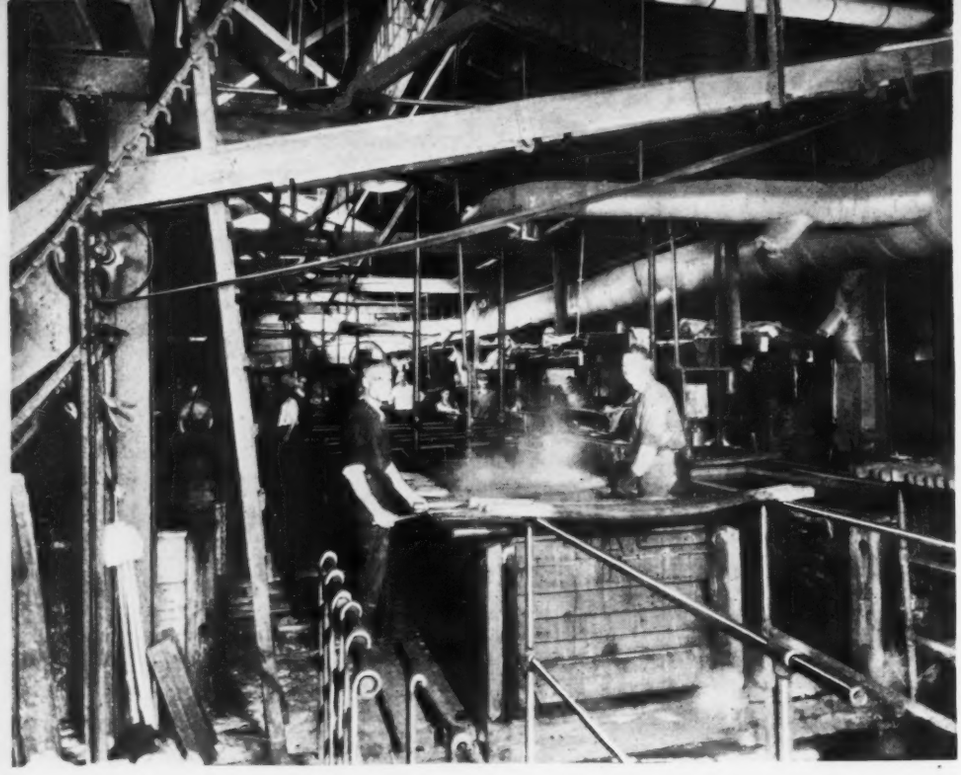
"If you want to use our label, you must accept our specifications" was the manufacturer's ultimatum. It is significant that the buyers refused to accept cheaper goods under such terms and the amount of business lost thereby was negligible.

In all textile selling there has been a slow but steady increase of emphasis on quality. Price remains a big factor, and will continue so, but price stress is being tempered. Buyers are more selective, more discriminating. Textile merchandising at present is a price *plus* quality proposition. The recent decision of an important broadsilk company to divide its line into two clearly separate departments—one quality and one price—is typical of the trend. This firm noted a scarcity of better fabrics in the higher price ranges in women's dress field, and aims to concentrate more specifically on getting this business.

Such then is the present state of the quality movement. It is at one with the economy buying trend. The consumer has passed the stage of being lured by a price-tag alone. He looks with disgust at his cheap purchases of last year—worn out almost before the end of the season; and he applies the quality test to merchandise before purchase.

The cue for the textile manufacturer is to turn gradually toward the use of better yarns in better constructions, produce with the utmost caution, style carefully and sell on the basis of true value. He has started in this direction, but there must be no let-up. The consumer is definitely out for quality, and the manufacturer must follow this trend.

He can best stimulate sales and strengthen prices by gearing his orgnization to conform to the new note: quality *and* price.



What chance has this dyehouse—

135% RETURN FROM NEW EQUIPMENT FOR RAW STOCK AND YARN *Processing*

"THERE is no more money in the dyeing business. We work like slaves and do not get anywhere." Two years ago the owner of a dyehouse in New Jersey made this only too common complaint. His plant, cluttered with obsolete equipment, bore a close resemblance to the one shown on this page.

"Life with us has taken on a new aspect. . . . At the end of every week we notice an improvement in every direction and we can meet our bills when they are due." The same man made these remarks a few weeks later. In the meantime he had installed a modern automatic skein dyeing machine which had reduced his operating costs some 40%.

Look again at the accompanying photographs. What chance has the dyehouse shown on this page to compete with that illustrated on the next?

This spring a dyer of rayon yarns who found that he was unable to operate at a profit under present conditions asked the writer to advise him of some means whereby he could reduce production costs. A visit to the plant owned by this dyer disclosed the fact that with the exception of a fairly efficient skein dryer, practically every piece of equipment in the building was hopelessly out-moded. It was recommended, among other things, that several hand tubs be replaced with modern machines, which would have permitted a reduction of nearly 50% in dyeing costs. Despite the fact that the new equipment would have paid for itself within a year, the owner of the plant refused even to investigate its possibilities. Today he is looking for a job as a superintendent, boss dyer, or dyestuff salesman.

Changing Conditions

What has happened to the skein dyer has also happened to the bleacher and dyer of raw stock and yarn of nearly every type. Within the last decade he has been confronted with a growing demand for fast colors, increased use of rayon and other synthetic fibers, unprecedented calls for small lots in a wide variety of shades, and introduction of new dyestuffs and chemicals. During the same period there have been brought out many new machines, either radically changed or greatly improved in design over previous models. In many cases, therefore, equipment that was well adapted for the work for which it was originally intended has been rendered obsolete, and its continued use results in excessive costs, delays to production, and unsatisfactory finished products.

The mere fact that equipment is five, ten, or fifteen years old does not, of course, make it ready for the junk pile. Furthermore, a machine totally unsuitable, say, for dyeing vat colors on rayon yarn, may be entirely adequate for applying direct colors to cotton. To a large extent then, the conditions peculiar to the individual plant determine whether or not a certain type of equipment is obsolete. It is true, however, that in many instances machines are now in operation which are placing a serious burden on the business, and replacement of this equipment with improved types would result in a net annual return of from 25 to 135% or more on the investment.

With the wide variety of machines employed in yarn processing, it is obviously impossible to enumerate all the improvements which have been made in recent years. Instead, a few examples will be given of the actual results which have followed the installation of up-to-date equipment.

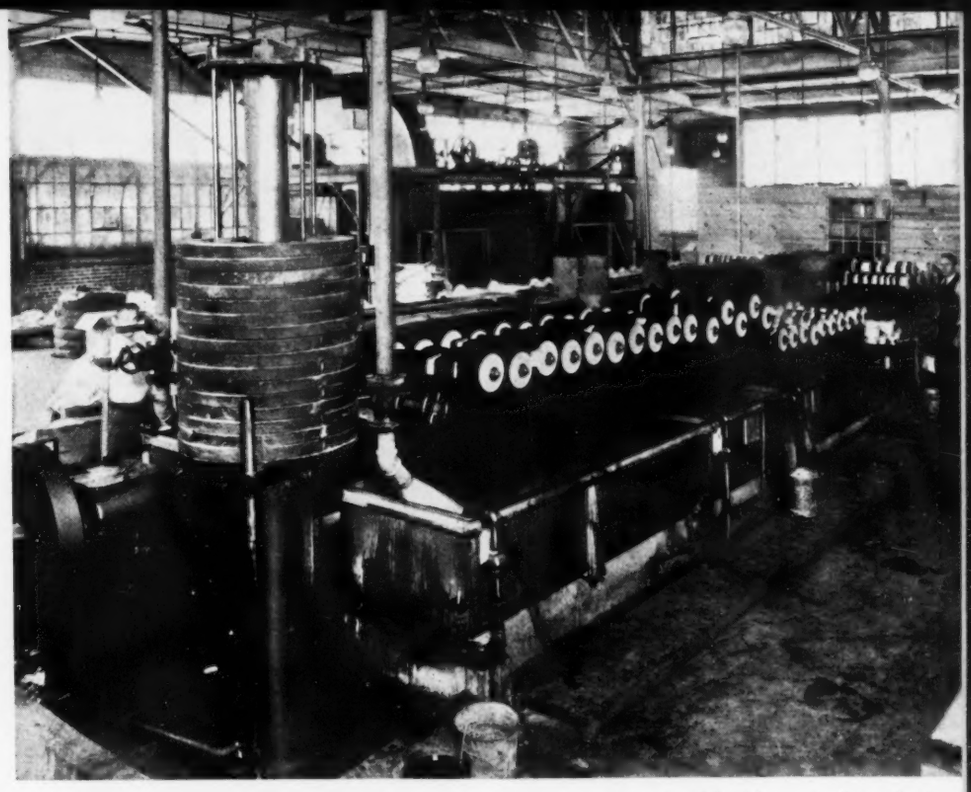
Raw Stock Dyeing

For dyeing both cotton and wool in the form of raw stock, use of closed machines is rapidly superseding the open-tub method. The comparative costs of the two methods are brought out forcibly in a series of surveys made in New England woolen mills by A. C. Nielson Co. Thus, in a dyehouse in Connecticut a 350-lb. open tub was replaced with a 500-lb. pressure machine at a cost of $2,800. The comparative cost of dyeing, exclusive of that for dyestuffs, is shown below:

Cost Per Lb. of Wool	Open Tub	Pressure Machine
Fixed Charges	$0.0009	$0.0020
Steam	0.0034	0.0012
Labor	0.0057	0.0024
Power	0.0000	0.0004
Total	0.0100	0.0060
Saving		0.0040 = 40%

The production per year in round numbers is 260,000 lb., giving an annual saving of $1,040, or 32.2% net return on the investment.

Even more remarkable were the results in a Massachusetts woolen mill where four pressure machines replaced eleven open tubs. The cost of the new equipment was $11,200. Comparative data for three weeks' output revealed savings of $0.0176 per lb., or $15,141 a year on the estimated output, a net annual return of 135% on the investment. Surveys in four other plants revealed savings per pound of $0.00253, $0.00382, $0.0055, and $0.0141, respectively—the net annual return ranging from 33.5 to 141%.



—to compete with this up-to-date plant

Yarn Dyeing

Automatic skein dyeing machines of various types have in many cases proved their superiority over the hand tub. Particularly is this true in the case of rayon. Not only do dyeing costs show an average reduction of about 40%, but the quality of the work is improved, the time required for dyeing is shortened, floor space is saved, working conditions are bettered, and costs for the subsequent winding operation are lessened. Tests conducted with one of the newer skein dyeing machines when employed for applying vat colors to rayon show the following savings: dyestuffs, 25 to 50%; labor, 50%; dyeing time, 25 to 30%; winding cost, 60%. In addition are noted economies in water, steam, etc. It is estimated that as a rule this type of equipment will pay for itself in about a year.

Numerous improvements have been made in recent years in equipment for dyeing yarn packages of various types, and the superiority for certain classes of work of package dyeing machines is so well known that it scarcely needs mention. Savings effected in dyeing cotton yarn with modern equipment of this type run as high as 50% for labor, 25% for dyestuffs, 50% for steam, and 75% for drying and packing. In addition, winding costs are reduced from 4c. to 15c. a lb.

Quality, rather than cost, is sometimes the most important factor. In dyeing rayon for certain purposes this is particularly true. Here package dyeing, although usually considered to be more expensive than skein dyeing, often justifies the extra cost. Development recently of equipment specially designed for package dyeing of rayon gives promise that the difficulties formerly encountered in this process will be overcome, and that dyeing costs will be materially reduced.

A wealth of data are available on the savings effected by the installation of modern drying equipment. From these, two examples will be given. For drying dyed cotton stock a New England manufacturer replaced twelve drying tables with two up-to-date dryers. Tests showed a reduction in daily operating costs of $58.71, which corresponds to 53.3% net annual return on the investment. One of the leading carpet and rug mills had in operation a yarn dryer developed by its own engineering staff. After a conference with the engineers of a concern specializing in the manufacture of dryers, equipment made by the latter company was installed. A comparison of drying costs—including cost of floor space, steam for heating, depreciation, interest, labor, and power—showed a saving of $0.731 per 1,000 lb. of dry yarn in favor of the new dryer. This represents a yearly saving of $4,200, an amount which is sufficient to return the investment completly in about two years.

Many types of equipment other than those already mentioned have been vastly improved in recent years. Thus, hydro-extractors for raw stock, skeins, and packages have been radically changed—power requirements, labor costs, and loading and unloading time have all been reduced. Automatic continuous extractors for raw stock have been developed, with which savings equivalent to a net annual return of 111% on the investment have been reported. Equipment for dyeing slubbing, roving, tops, and beams has been simplified, and in some cases redesigned to enable processing of various types of packages in one machine.

There have been evolved also a combination warping and gassing machine, which permits warping direct from twister bobbins, and a combination skein winder and single-end gassing machine which gases the yarn in the skein-winding process. A new multi-color warp printing machine operates at speeds up to 50 yd. per min. Combination raw stock and skein dyeing machines are now available which afford a flexibility with which to meet changing conditions, lessen the initial outlay for equipment, and reduce floor-space requirements.

In this quick survey it has been possible only to mention briefly some of the more important developments in processing raw stock and yarns and to give a few examples of the savings which have followed the installation of modern equipment. Replacement of obsolete machines of other types with the most up-to-date models will in many instances result in economies fully as large as those which have been recorded.

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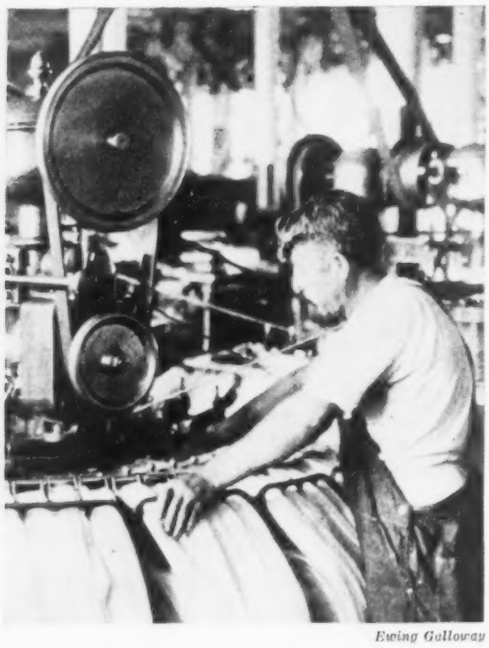
The present article is the sixth in the second series of studies of depreciation and obsolescence of textile equipment. Cotton-yarn machinery was discussed July 4, 1931; worsted-yarn machinery, Aug. 1; woolen-yarn machinery, Sept. 5; silk- and rayon-throwing machinery, Nov. 7; circular-outer wear and underwear machinery, Jan. 9, 1932.

Noble-Comb Adjustments

FOR PRODUCING FINE YARN

By Frederick B. Hudson



Ewing Galloway

NEPS stand out on the surface of fine worsted yarn like buttons. Noily tops have not the requisite length to make fine and regular yarns. The Noble comb can be adjusted to reject noils below one inch long and practically to eliminate all neps.

Regular feeding is essential when good tearages are desired, because a badly punched top is always a source of trouble. Great care should be taken when gilling fine wools in the strong box prior to combing in order to obtain regular feeds. Fine wool slivers for the Noble comb should be made to weigh about 14 oz. per 10 yd. Irregular slivers make uneven fringes in the comb.

In punching the feeding ball, care must be taken to prevent the ball from "slicing" or falling into pieces after it has unwound a few yards. The pressure in ball winding plays an important part in the formation of a level fringe; balls made with two much pressure do not supply enough length to the fringe, while those made with insufficient pressure cause the fibers to be plucked out by the drawing-off rollers instead of drawn through pins.

A safe rule in determining the amount of throw-over across the small circle is to have the wool projecting $\frac{1}{8}$ in. from the inside of the circle at the tangent where the large and small circles meet. The height of the trap boxes governs amount of feed; and it is not advisable to have these too high, because the wool tends to trail behind the box and gives trouble when it is dabbed into the pins of the circles. Trailing slivers can be prevented by lowering the inclined plane and giving a deeper depression to the feed knife. At the same time the inclined plane should be moved forward towards the dabbling brush in order to hold the trap box for a short time while the sliver accommodates itself to the late dab. The fall of the trap box at the end of the inclined plane should coincide with the descent of the dabbing brush.

The combing must take place in the straight part of the pins. When the circles separate, with wool between the tapered parts of the pins, many neps and short fibers pass into the combed sliver. This fault may be caused by an improperly placed or badly worn brush.

Imperfect stroking by the star wheel causes the fibers to be seized in the middle and formed into bunches of doubled fibers in the top.

A good grip in the drawing-off rollers is essential, because the rollers are small in diameter; therefore, thinner leathers are used when these wools are combed. Thick leathers last longer, but have not the same gripping power. A suitable thickness of leather for a 70s merino wool is $\frac{1}{8}$ in. Small drawing-off rollers are essential, because the point of contact must be as close to the circle as possible and large rollers cannot reach the fine wools. The pressure on the rollers at the top should be equal to the bottom pressure to prevent the material "slubbing" or "cockling" as the drawing-off takes place.

Excessive speed of the drawing-off rollers makes patchy slivers, while slow drawing-off produces lumpy ones. A suitable method of determining the speed of drawing-off is to multiply the surface speed of the circle traverse by the length of fringe. A circle with a 500 in.-per-minute traverse, carrying a 3-in. fringe, should have a drawing-off roller surface speed of at least 1,500 in. per minute.

Worn leathers can be obviated by a skillful adjustment of the leather traverse motion, which distributes the wear of drawing-off. A much longer life will be given to a leather when it is traversed to $\frac{1}{2}$ in. of the edges of the leather and moved at about one traverse per 5 min. The inside leather should move about 3 per cent quicker than the outside one to effect a perfect clearance of sliver at the take-over.

The pins of all the circles should be kept clean and in good running order when these wools are being combed, as the fine waste gathers between the pins and acts as a cushion so that when the dabbing brush forces the wool down into the pins it springs back again into the tapered part of the pins. About every two hours the circles should be cleaned by running a knife between the rows of pins to cut this waste away.

Suitable pinning of the circles is an important feature in producing well-combed slivers on a Noble comb. For fine wools of this nature, very fine pins should be used and set closely together. The small circles should be finer than the large one, because they carry the noil. Suitable circles for fine merino wools would have four rows of flat pins and seven rows of round ones. The finest row of flat pins would be 17 x 27 for the small circle and 18 x 28 for the large one. In the small circle the pins would be set 46 to the inch; and in the large circle, 42 to the inch.

ACREAGE REPORT HELPS TO DEFINE

Cotton Crop Outlook

ONE OF the basic factors in forecasts of the supply and demand outlook for cotton during the coming season was determined for all practical purposes, by the report of the Crop Reporting Board on July 8, placing the acreage under cultivation as of July 1 this year at 37,290,000 acres, representing a decrease of 9.5% compared with the acreage planted last season. This, of course, will be used in the formulations of prospective crop ideas, as the season advances, but as yields per acre since the war have ranged from 124.5 lb. in 1921 to 201.2 lb. in 1931 representing a difference of five to six million bales on a present day area, the trade is still facing an uncertainty in the crop, now entering its critical period.

COMPARISONS FOR ACREAGE AND YIELDS

(Figures on acreage and crop are in thousands.)

	Acreage Planted	Acreage Picked	Boll Weevil Damage, %	Yield per Acre, Lb.	Crop in Running Bales
1921	31,678	30,509	31.2	124.5	7,978
1922	34,016	33,036	23.3	141.2	9,729
1923	38,709	37,123	19.2	130.6	10,171
1924	42,641	41,360	8.1	157.4	13,639
1925	48,090	46,053	4.1	167.2	16,123
1926	48,730	47,087	7.1	182.6	17,755
1927	41,905	40,138	18.5	154.5	12,783
1928	46,946	45,341	14.1	152.9	14,297
1929	47,067	45,793	13.3	155.0	14,548
1930	46,078	45,091	5.0	147.7	13,756
1931	41,189	40,693	8.3	201.2	16,629

Latest statistics point to an end-season world's carryover of American cotton somewhat larger than anticipated last winter and well in excess of the current season's consumption. Expectations of increased takings by the Orient have materialized in part at least, as exports to Japan, China and India up to the end of June were nearly 2,000,000 bales in excess of last year's, and there has undoubtedly been a good deal of substitution of American for East Indian cotton abroad. Depression in the textile industry has found a greater reflection in the domestic trade than anticipated, however, and according to the New York Cotton Exchange Service, world consumption of American cotton for the first ten months of this season was approximately 10,454,000 bales compared with 9,222,000 last year. If consumption for June and July equals the May figures, the total for the season will be only 12,500,000 bales whereas toward the end of last winter it was expected to aggregate 13,000,000 bales or slightly over. These figures on consumption would imply an end-season carryover of slightly over 13,250,000 bales which naturally emphasizes the necessity of trade improvement, if the entire crop of this year is not to represent a surplus supply. It is generally expected that the trend of prices will now be determined by a comparison of this year's crop with next season's requirements and whether it points to an increase or a substantial reduction in the world's carryover by the end of July, 1933.

The two unfavorable features affecting the crop which have been most discussed have been a reduction of about 40% in the indicated use of commercial fertilizer, and probability of boll weevil damage following the mild winter and heavy survival. It is possible that decreased use of commercial fertilizer will be offset by the increased use of cover crops and home composts which may be available in larger volume than during previous years owing to increased numbers of livestock. That remains to be seen. However, the situation as to weevil seemed to be assuming serious aspects toward the end of last month. All reports have emphasized their presence, and the impression is that they are more numerous than at any time since 1923. Of course, heavy initial infestation does not necessarily imply correspondingly serious damage, but there can be little doubt that they are in sufficient numbers to be a very important factor if they are not controlled by poison or weather conditions. Hot, dry weather would reduce weevil damage, but too much of this would undoubtedly bring plant deterioration.

The average yield per acre in the three boll weevil years of 1921, 1922 and 1923 amounted to only 132.1 lb. per acre, while the outturn during the last five years averaged 162.3 lb. The first with an allowance for abandonment of acreage would mean a crop of around 9,985,000 bales, while the latter might easily mean a crop of about 12,648,000 bales.

In either event, there can be no conceivable threat of scarcity, but should present reports of weevil infestation be matched by actual damage reports later, and the prospects point to a substantial reduction in the world's carryover by the end of July 1933, the market is expecting somewhat better prices for cotton, with the extent of the improvement depending upon whether general business conditions are definitely on the up-grade. That with improving economic conditions, world's consumption can expand rapidly, is demonstrated by the increase from 10,900,000 bales of American cotton consumed in 1923-24, to 14,000,000 in 1925-26, and the further jump to 15,700,000 in 1926-27 stimulated by abundant supplies and low prices. At the best, however, more than one year of moderate yields and trade improvement would be required to reduce the present indication carryover of over 13,000,000 to a normal of around 5,000,000 bales, and reconstruction of the statistical position is likely to place a limit on market responses to summer crop scares.

1931 Cotton Inferior

IMMATURE FIBERS IMPAIR DELTA CROP

MANY spinners of fine combed yarns, particularly those running on long-staple cotton grown in the Delta, have experienced difficulty this year in keeping their breaking strength up to the standards of previous years. This condition was rather general in mills using Delta cotton of 1-in. staple length and above. At first the decline in breaking strength was attributed to the manufacturing processes, but investigations showed that the trouble was due to weakness of the fiber, although the spinning qualities of the 1931 crop were about equal to those of previous crops.

Continued reports of the loss in breaking strength of yarn spun from the 1931 long-staple crop led The Arkwrights, Inc., the Southern research organization, to undertake a study of the results obtained in spinning mills. A questionnaire was prepared and sent out to a large number of mills using cotton of 1-in. and longer staple. The answers were received and the data compiled by Marshall Dilling, president of the organization. The results, which were published in the last quarterly issue of *The Arkwright Journal*, were in part as follows:

The length of staple used by reporting mills:

Staple Length (Inches)	% of Users	Staple Length (Inches)	% of Users
1 1/32	14	1 3/16	23
1 1/16	10	1 7/32	2
1 3/32	6	1 1/4	11
1 1/8	20	1 5/16	10
1 5/32	4		

It was found that 47% of mills reporting use strict middling cotton, 44% use middling, and 9% use strict low middling. Replies indicated that 65% use cotton grown in the Delta, 31% use cotton from the Carolina area, and 4% use Western cotton. The information on Western cotton showed no material change from other years and is not considered further in this study.

In answer to the question, "How does the quantity of waste compare with the 1930 crop?" the following information was received:

	% of Delta Cotton Users	% of Carolina Cotton Users
Less	None	35
Same	57	43
1 to 5% more	36	22
6 to 10% more	7	None

A further question involved a comparison of breaking strength with the 1930 crop. Answers:

	% of Delta Cotton Users	% of Carolina Cotton Users
Better	2	40
Same	19	60
1-5% lower	29	None
6-10% lower	32	None
11-15% lower	10	None
16-20% lower	8	None

A comparison of breaking strength with other years was then called for.

	% of Delta Cotton Users	% of Carolina Cotton Users
No record	22	None
Better	None	53
Same	11	47
1-5% lower	30	None
6-10% lower	20	None
11-15% lower	10	None
16-20% lower	7	None

A comparison of the data in the two preceding tables indicates that the 1931 Delta crop was very inferior in strength as compared with former years, whereas the 1931 Carolina crop showed a decided improvement in strength.

Answers to the next question revealed that spinning qualities of the Delta crop did not decline in proportion to the decrease in strength. Only 34% of the users of Delta cotton reported a decline in running qualities of 1 to 5%, while 12% of those mills reported a 6 to 10% decline. Other answers indicated that the Delta cotton was smooth and soft in appearance and feel, and showed some improvement in appearance; but there was more unevenness than usual. It was thought that immature fibers, resulting from premature opening of the cotton, was the principal cause of the decrease in strength of the Delta 1931 crop. This was evidently due to weather conditions prevailing during the picking season.

The answers to the question, "What have you done to remedy any troubles you found?" were of interest. The data are given below:

	% of Delta Cotton Users
Changed to longer staple	27
Made yarn heavier	5
Took out more waste	22
Changed to Carolina cotton	11
Put in more twist	8
Readjusted roll settings	10
Carded slower	3
Reduced picker processes	3
Found nothing helpful	11

Sixty per cent of those who had changed to longer-staple cotton, taken out more waste, put in more twist, and readjusted roll settings reported that these changes had helped only in a small way and that they had not been able to get the breaking strength of former years.

Mill Villages—

THEIR IMPROVEMENT AND MAINTENANCE

By A. E. Jury
Agent, Winnsboro (S. C.) Mills

Typical house in Winnsboro mill village

◆ *In discussing the subject of cotton mill villages at the annual meeting of the Southern Textile Association, Mr. Jury pointed out that improved methods of communication had provided easy means for acquiring education and information, and that consequently there has been a gradual change in the attitude of the individual toward standards of living, particularly in the matter of homes and surroundings. This desire for improvement, he said, should justify housing facilities in mill villages which compare favorably with those in communities where industrial employees in modest circumstances own and maintain their own houses. The many practical suggestions he made along these lines are printed below.*

IN ORDER of importance, so far as appearance is concerned, the most important improvement in mill villages had to do with grass and shrubbery, paint—outside and inside—cement sidewalks and curbs, and better built streets. From the point of view of the sequence in which these improvements should be made, cement sidewalks and curbs should probably come first. Without cement sidewalks it is almost impossible to maintain grass, and particularly to maintain edges that give the appearance of well kept lawns. If, however, cement sidewalks or their equivalent are first laid, those serve as starting points for the grass. It is in fact desirable to provide properly defined walks, preferably cement from sidewalks to houses, to avoid the wearing of paths across the grass.

As for grass planting, we have found that it is unnecessary to use roots or sod to obtain a good stand of hardy grass. If a reasonable amount of top soil is used, it can be grown from seed without much difficulty, but for good results the seed should be used freely. After a stand of summer grass has been developed, using a good perennial seed—preferably straight Bermuda—it is possible to have green lawns practically the year around by the addition of comparatively small quantities of winter grass used late each fall about November.

In considering the planting of shrubbery, this depends upon the appearance desired. Comparing the open type of landscaping with landscaping in which yards are enclosed with hedges, we prefer the open type. This lends itself better to artistic plantings around houses and it avoids the expense of upkeep of the hedges and the dirt and accumulation of papers and leaves which result from hedge arrangements. With the open type of yard the grading should be done to obtain so far as possible the effect of a continuous slope or flat field of grass with the houses located at intervals, and a very good effect is obtained by the use of a planting for each house of from 10 to 25 plants, the majority of which should be of the evergreen type.

Next to grass and shrubs there is probably nothing which adds so much to the appearance of the village as paint. There is a good deal of difference of opinion regarding the practice of varying color schemes throughout the village. Some maintain that a uniform color improves the appearance because it obtains the "spotless town effect." It is our opinion, however, that variation in the color schemes of houses adds infinitely to the interest and gives an appearance of individuality which can be obtained in no other way. It costs practically no more to vary the color schemes because it is unnecessary to use more than three background paints and possibly five to six different trim paints in a number of combinations, and for an ordinary year's work on village painting, this plan would have no material effect upon the quantity prices. A very convenient plan is to first lay out 10 to 12 different color combinations, and usually paint manufacturers have facilities for offering valuable suggestions for working out such a scheme.

To spread the cost of painting as evenly as possible, it is usually most convenient to paint a proportion of houses each year, rotating in such a manner that the entire village will be painted during the estimated life of the paint. This plan generally results in spotting houses through the village for painting in any one year. In doing this, so that adjoining houses may be painted properly with respect to one another, it is a good plan to plot the entire village at once, indicating by numbers the exact paint scheme which will be applied when it comes time for painting.

Inside painting is a matter which is less spectacular but is of great importance to the convenience and happiness of the employee. From the point of view of upkeep of property, the general inside repair cost will be found to be lower in houses where the paint has been kept in good condition. Here again there is very little added expense involved in varying color schemes. It has been our practice to have standard combinations available for living rooms, bed rooms and kitchens. Combinations are selected which will harmonize with one another and with this arrangement we prefer to have the tenants select from these standard color schemes those which they prefer.

Cut-Presser Diagonals

IMPORTANT ELEMENTS IN CIRCULAR SPRING

By J. Frederick Cahill
357 Fourth Ave., New York

IF A diagonal can be of any use in overcoming the even division of needles by pressers, which way shall it slant? Diagonals in fabrics ordinarily slant upward to the right and downward to the left as viewed on the face of the fabrics. It has been shown that on loop-wheel spring-needle machines the back of the fabric is on the outside and most readily observable by the operator; and so, if a diagonal must slant upward to the right on the face, it must slant upward to the left on the back or outside, as seen on the machine.

The machine in use has been fitted with stitch-forming equipment which requires to be so rotated that the needles nearest the operator are moving toward his right; and it is necessary to add one needle in order to knit off or clear the needles of the tucks caused by the single deep cut in the presser and at the same time produce a diagonal with a proper slant. This article will explain the problems involved in diagonal design.

It has been shown that by adding needles to the number normally divisible by a presser, a specific point on the presser gains on the cylinder in the direction of rotation—a gain equal to the number of added needles for each revolution of the cylinder. This being true, it follows that the addition of one needle to the cylinder will cause the single deep cut in the presser to gain one needle on the cylinder for each revolution. It also follows that every portion of the presser partakes of that gain and that a print in the presser adjacent to the deep cut must, in each revolution, act upon and clear the needles missed by the deep cut in the preceding revolution.

◆ *"A knitter who thoroughly understands the action of pressers in the production of diagonals," states the experienced knitting consultant who is the author of this article, "will have little difficulty in understanding the action of pressers in the production of designs and figures of one color on a mixed ground consisting of alternating courses in two colors." Hence Mr. Cahill discusses diagonals at considerable length in this second article of his series on "Design Knitting with Circular Machines."*

At the close of the first article, published in TEXTILE WORLD, *May 28, page 44, he remarked that using a presser which divides evenly into the number of needles would cause the needles entering the deep cuts to load up continually—a condition which cannot go on indefinitely. This article begins with an explanation of how diagonals are used to overcome this difficulty.*

As each course is laid into the needles, the loops in the preceding course move away from the needles in the direction of the pull of the take-up, which, in the case of loop-wheel spring-needle machines, is upward.

It is evident, then, that if the presser gains one needle in each revolution of the cylinder, it will produce a tucked stitch in each course one needle in advance of the tucked stitch in the preceding course. As the preceding course has moved upward in response to the pull of the take-up, the tucked stitches in that course are one course above and one needle following, or one needle behind, the tucked stitches directly on the needles—in this case, one wale to the left of the tucked stitch on the needles, as the needles are assumed to be moving toward the right.

As the fabric moves upward one course for each revolution of the cylinder and the deep cut in the presser gains one needle for each revolution, the effect produced with one feed is ten diagonal series of tucked stitches slanting upward to the left as seen on the machine, as the whole presser divides into the cylinder ten times with one needle over.

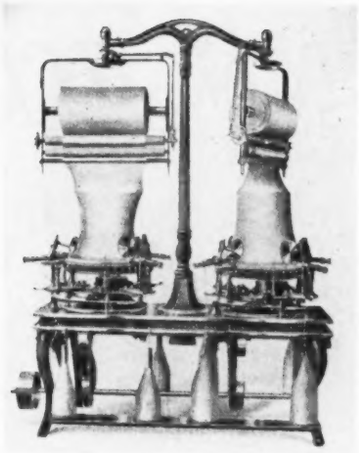
Variations in Design

If the presser were then provided with a deep cut for every tenth cut, making it nine prints and one cut, the diagonal lines would be all of the same character as before but there would be 100 lines in the fabric. If two needles were now removed from the cylinder, reducing it from 1001 to 999 needles, the character of the stitches would remain the same, but the slant of the diagonal would be reversed, due to the fact that the presser would fall back one needle for each revolution of the cylinder.

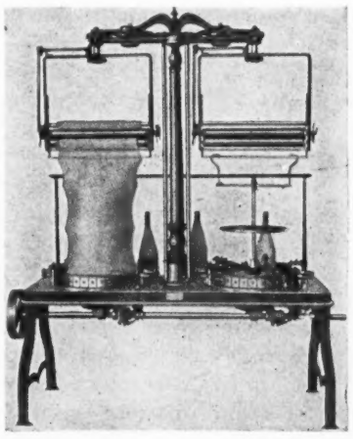
If one more feed with a plain presser, either stationary or rotary, were now added, the character of the diagonal lines would be altered. The diagonals would rise more sharply and the tucked stitches would be more widely separated vertically, due to the fact that a plain course has been introduced between the courses in which the tucks are made.

With two feeds, one with a cut presser and one with a plain presser, it is possible to restore safely the missing needle and use the original 1000 needles. In such case the tucked stitches may occur on the same needles in each revolution, as they will be cleared or cast off by the plain presser; and the effect will be one hundred vertical lines or stripes of one tucked wale each, with nine plain wales knitted between them.

With two feeds the introduction of colors becomes a possibility; and it is evident that if both feeds were



◆ *The knitting machines shown herewith are typical of those adapted to cut-presser designing, but Mr. Cahill's careful explanation of the details involved in producing diagonals should prove beneficial to those engaged in designing knitted fabrics to be made on other types of circular machine.*



equipped with plain pressers and a different color were delivered to each feed, a fabric plain as to stitch would result, but with the two colors alternating in the courses, presenting a uniform field. We shall deal extensively with color work in subsequent articles of this series.

Looping Prevented

Referring to the paragraph touching upon needles in prearranged locations (May 28, page 45, bottom of second column), it will be seen that in deepening every tenth cut in the cut presser it has been decided that every tenth needle is in the prearranged location. However, for machines in Class *B* (defined on May 28, page 44), the expression in regard to "needles in prearranged locations or knitting loops of yarn of a selected color in the proper course" might be changed to read "needles in prearranged locations to be *prevented* from drawing or knitting loops in yarn of a selected color in the proper course," as the deep cuts in the presser *prevent* the needles that enter them from drawing or knitting loops in that course.

Results Obtained

Placing the cut presser on the feed to which the white yarn is being delivered, the other feed being black, the result will be that nine needles will draw loops of white yarn, while the tenth needle, entering a deep cut in the presser, will not draw a loop of the white but will hold its loop of black yarn received from the other feed. Being a plain feed, the feed with the black yarn causes a loop of black yarn to be knit or drawn on every needle; and the result obtained is that, for nine needles, alternate courses of white and black are visible, but on the tenth needle only the black is seen, as that needle draws or knits loops of black yarn only.

With the original 1000 needles the effect produced by this combination would be 100 vertical strips of fabric nine wales wide with alternating courses in black and white and 100 narrow, vertical black stripes one wale wide on the inside or face of the fabric. With 1001 needles the stripes would slant upward to the left; while with 999 needles the slant would be in the opposite direction as seen on the machine from the outside, but upward to the right on the inside.

To obtain this same effect with four feeds and two cut pressers cut 9x1, it would be necessary to add two needles to the original 1000, making 1002, and set the deep cuts in the pressers one needle apart in the direction of slant—in this case each presser one needle ahead of the tuck in the preceding course. For the reverse diagonal the number must be reduced to 998, and the pressers set accordingly.

A fairly safe rule for diagonals is that in each revolution of the cylinder the pressers must gain or lose a number of needles equal to one-half the number of feeds on the machine. The cuts in the pressers must then be set one needle apart in their relation to each other along the diagonal.

Slanting Both Ways

Diagonals slanting in both directions may be made by using cut pressers on all feeds, each alternate set of pressers controlling its own particular slant or diagonal. For this, however, while the pressers in each set must be of the same size and cut, the two sets must be of different size and cut, as it is evident that a presser cannot both gain and lose at the same time.

A difference of one needle in divisions of 10 or more needles is not noticeable in the fabric, and sometimes even a change of two or three needles produces no very great distortion of the design effect.

Much space has been given to the effort to impart a clear understanding of diagonals because all designs on machines in class *B*, with the exception of straight, vertical stripes, are built up by variations of the principles of the diagonals. In fact designs and figures on knitting machines in both *A* and *B* are always distributed over the fabric in more or less diagonal lines. A knitter who thoroughly understands the action of pressers in the production of diagonals will have little difficulty in understanding the action of pressers in the production of designs and figures of one color on a mixed ground consisting of alternating courses in two colors.

Preventing Warp Streaks

IN RAYON CREPES

ONE of the more common faults encountered in all-rayon crepes is a streaky appearance in the warp. This defect is particularly difficult to avoid, since it may be due to any one of ten or more distinct causes. Likewise, when streakiness is found in a dyed or finished fabric, it is almost impossible to place responsibility for this condition.

If, however, the various factors entering into the problem are known, precautions can be taken which will minimize the occurrence of warp streaks. For this reason, we are listing below the chief causes for streakiness.

1. *Mixed lots of rayon in the warp*—Care should be taken to avoid use of rayon made by different producers, rayon purchased at different times from the same producer, or rayon which is not uniform in denier, number of filaments, or twist.

2. *Uneven tension in coning*—A streak can be produced by improperly coned rayon. This yarn can be made into a smooth sheet of warp and woven into a streak-free piece of gray goods and then show in the scoured, undyed goods an array of warp streaks which are even more prominent later in the dyed and finished cloth. A large number of the mills using rayon in large quantities believe that it is better practice to buy the rayon in skein form, rather than on cones, and then spool it on the ordinary spooler. The theory is that in coning a certain amount of drag is applied to the yarn which tends to stretch it.

3. *Uneven tension in warping*—Warp streaks may be caused by uneven tension in warping, resulting in the production of a warp with some threads tighter or looser than others or with certain threads warped in bunches or bands of varying compactness. This uneven spacing of threads can go through the warp sizing and the weaving processes without being eliminated from the warp and will appear in the gray goods as streaks of closely placed threads (darker dyeing effects). The bands or threads with the greater tension will show as straighter, more lustrous, and smoother bands in the scoured or dyed goods.

4. *Uneven setting of twist*—Precautions should be taken that the setting of the twist is uniform in both the right- and the left-hand twist.

5. *Unequal spacing of warp threads*—Finer reeding in warping has a tendency to reduce warp streaks caused by unequal spacing of the threads, and, by reducing the non-uniformity of reed (or other) free spaces between the warp threads in the gray goods, will produce a more even creping of the cloth. The reeding in weaving also has its effect. A uniform reed, free from unreasonable defects, should be used; and not too many threads should be put into a dent in order to secure a better cover in the cloth. In weaving, care should be taken in adjusting the loom and the warp to make certain that the sheet of warp threads on each side of the shed is smooth; that is, to have the threads of each respective sheet as nearly in the plane of the sheet as possible.

6. *Sleazy fabric construction*—If there are insufficient warp ends to hold the filling or insufficient filling to hold the warp, when the fabric goes to the dyehouse and is boiled out and the crepe put in the fabric, the creping action of the filling takes place in a rapid, irregular manner. It follows the line of least resistance, and in so doing bunches together a number of warp ends. These in turn open up the warp in the fabric in a scattered manner, and give it a streaky appearance.

7. *Improper desizing of gray goods*—Streaks in this type of fabric may be due to the fact that the warp size and the material used in throwing the filling are not scoured from the rayon in a uniform manner. Many mills have found that it is good practice to furnish the finisher with information as to the kind of size which was used in the slashing. Then the finisher, knowing the ingredients, can use the correct procedure to remove all the sizing from the gray goods before dyeing. Mills use various types of sizing; and if the finisher does not know just what was used in a particular case, he has to do much guessing, and many times his guess is wrong.

8. *Improper choice of dyestuffs*—It is known that dyestuffs differ greatly in their property of producing even dyeings on rayon. Whenever possible, therefore, colors selected for their level-dyeing properties should be employed. In some cases it is possible to reduce the visibility of the streaked appearance by proper selection of dyes which will tend to hide differences due to tension, as well as uneven dyeing qualities.

9. *Dyeing of fabrics which are unbleached or unevenly bleached*—A well-bleached fabric minimizes the danger of streakiness in the dyed and finished goods.

10. *Faulty finishing methods*—Excessive and uneven tension in tentering and other finishing operations must be avoided; otherwise streaks may occur.

Three Crimp Methods

EMPLOYED FOR WEAVING SEERSUCKER

By Thomas Nelson
Dean, Textile School,
N. C. Statee College

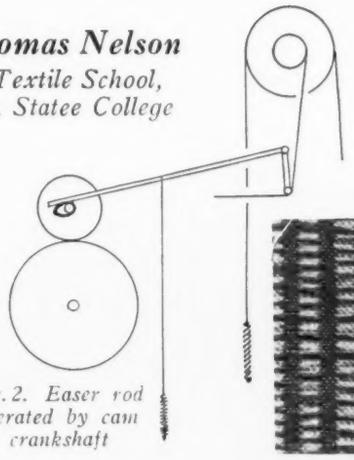


Fig. 2. Easer rod operated by cam crankshaft

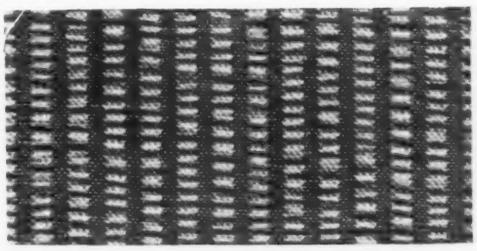


Fig. 3. Seersucker with small crimp

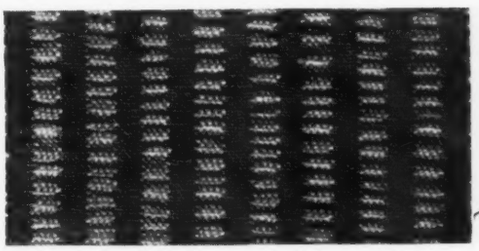


Fig. 4. Seersucker with pronounced crimp

SEERSUCKER fabrics are also known under such names as crimp, crinkle, and Ripplette (registered brand name). They have been made for many years in varying quantities, but the demand at present seems to be stronger than for some time past. It is a serviceable fabric and is used for a variety of purposes, such as children's dresses, rompers, men's summer suits, women's summer dresses, house dresses, bed spreads, etc.

When the ground weave of the fabric is all of plain weave, two warp beams are necessary. The bottom beam used for the plain cloth is made from single yarns and woven with regular tension on the warp. The top beam, which is used for the seersucker stripe, can be made from either single or ply yarns. When made from single yarns, the threads are doubled in the harness and crowded in the reed. When made from ply yarns, they are not usually doubled, unless fine yarns are used.

As the plain weave is used for both ground fabric and seersucker stripe, four harness shafts can be used. It is advisable to operate the seersucker stripe on separate harness shafts and not on the same shafts as the ground threads. The number of shafts to be used will depend on the construction of fabric. If the heddles or harness eyes are crowded on the shafts, more shafts should be used. The reeding of the fabric is usually as follows: for plain ground, two single threads in a dent; for seersucker stripe, two double threads in a dent.

There are several methods by which the seersucker effect can be produced. The first is by having the top or seersucker warp beam weaving comparatively slack. In this method the regulation of the weight on the beam is made according to the effect to be produced in the cloth. This slack weaving of the warp, together with the crowding of the threads in the reed, creates the crimp in the cloth. The tension on the beam, whether by weight or spring, should be set so that the pull will be away from the weight or spring.

In two other methods the warp beam for the seersucker stripe is woven tight, as in regular warp regulation. The motion illustrated in Fig. 1 is operated from the top of the lay sword. The seersucker yarn passes around an easer rod. As the lay comes to the fell of the cloth, the easer rod is pulled forward, slackening the yarn. This slackening on every pick affords a good crimp. The motion can be regulated by adjusting the collar *A* to give more or less movement to the easer rod. A spring fastened at one end to the floor and connected at the other end to the easer rod arm will pull the easer rod back to its original position after each pick. Sometimes a motion similar to this is obtained by connecting the rod *B* to the whip roll, the roll held in position by a spring.

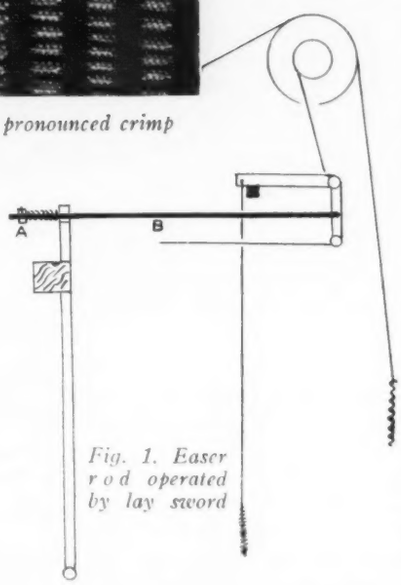


Fig. 1. Easer rod operated by lay sword

Another mechanical motion is illustrated at Fig. 2. A cam is fixed on the crankshaft which operates the easer rod, thereby slackening the yarn on each pick. The cam must be set to ease the yarn when the reed is close to the fell of the cloth. In either case the yarn may be drawn in either direction, but away from the tension.

Fig. 3 shows a seersucker fabric in which there is not very much crimp. The width of the fabric is 36 in. and the size of the yarn both in warp and filling is about 26. The threads are doubled in the harness and reed for the seersucker stripe. Each pattern has threads arranged six pink for ground and twelve white for seersucker. There are 184 patterns in the cloth, not including selvages. Fig. 4 shows another seersucker fabric in which the crimp is more defined than in the case of the fabric illustrated at Fig. 3. Contraction often runs 25 to 40%.

FULL-FASHIONED NARROWING

Putting on the Loops

By M. C. Miller, M.E.
Mechanical Engineer, Manville, R. I.

IN VIEW 11, Fig. 50, which shows the position of the parts at the end of the movement of the camshaft to 11, it will be seen that the needles and points have moved downward with practically no in or out movement in relation to each other; and if such in or out movement exists, care should be exercised to see that the points and needle beards do not contact with each other or are not separated from each other enough to strain unduly the juncture loops between shifted and non-shifted fabric. The narrowing points move downward faster and farther than the needles, in order to get into a position for later registering the end of their points in the eyes of their respective needles far enough below the tip of the beards to permit a correct locking together, as shown in the needle-and-point registry view Fig. 49 (TEXTILE WORLD, Feb. 13, page 28). It will also be noted in view 11, Fig. 50, that this downward movement of the needles and points has lowered the fabric so that it is about in line with the bottom of the sinkers.

As the camshaft moves to its position 12, the needles move downward and toward the points, as shown in Fig. 49. By examining the needle up-and-down motion 4, Fig. 51 (March 26, page 29), it will be seen that the roller 4 is lifted by its cam incline at the beginning of this movement and thereafter comes to a radial rest portion of its cam, thereby lowering and holding the needles at their lowest position during the remainder of this narrowing movement to 12. At the end of this same movement to 12, as shown in Fig. 51, the roller 2 rides up its cam incline, thereby transmitting to the needles a slight movement toward the points.

The sinkers in this movement commence moving toward the needles and points, as shown in Fig. 49; and by examining the catch-bar in-and-out motion numbered 3 in Fig. 51, it will be seen that the roller 3 of this motion in the movement to position 12, commences to move up its cam incline, thereby moving the sinkers toward the needles and points.

In this same camshaft movement to 12, the points continue moving downward, as shown in Fig. 49. By examining this motion numbered 5 in Fig. 51, it will be seen that the roller 5 continues moving down its cam decline, thereby lowering the points. The knock-over bits remain in their position 11.

A Register Effected

In view 12, Fig. 50, which shows the position of the parts at the end of the camshaft movement to 12, it will be seen that the needles and points have moved downward with very little in-or-out movement in relation to each other and that the needles have come to rest in practically the same position as in position 8. The points are in such position in relation to the needle beards that upon a subsequent movement of the needles toward the points a register will be effected, as shown in the needle-and-point register view of Fig. 49. It will also be noted that the needles have drawn the fabric down to the top of the knock-over bits, so that the sinkers, which have come toward and between the points and needles during this movement, can pass over the fabric during their subsequent forward movements.

As the camshaft moves to its position 13, the needles remain in the same elevation as in position 12, as shown in Fig. 49, their entire movement being toward the points. By examining the needle up-and-down motion 4 in Fig. 51, it will be seen that the roller 4 rides on the radial rest portion of its cam, thereby holding the needles at their previous position 12. During this same movement to 13, as shown in Fig. 51, the roller 2 continues moving up its cam incline, thereby transmitting to the needles their slight movement toward the points.

The sinkers in this movement move toward the needles and points as shown in Fig. 49; and by examining the catch-bar in-and-out motion numbered 3 in Fig. 51, it will be seen that the roller 3 of this motion in the movement to position 13 continues to ride up its cam incline, thereby moving the sinkers toward the needles and points.

In the same camshaft movement to 13, the points continue to move downward slightly, as shown in Fig. 49. By examining this motion numbered 5 in Fig. 51, it will be seen that the roller 5 has moved down its slight cam decline, thereby lowering the points. The knock-over bits remain in their position 12.

Needles Fully Buried

In view 13, Fig. 50, which shows the position of the parts at the end of the camshaft movement to 13, it will be seen that the needles have moved toward the points, while the points have moved down slightly to make possible the low register of the points with the needles, as shown in the needle-and-point register view in Fig. 49. Up to this time the flexing or hard pressing between points and needles has not taken place. The needles and beards are, however, quite fully buried in the groove of the points, the fabric still remaining in contact with the top of the knock-over bits. The sinkers have come in toward and between the points a considerable distance, although this change in position of the sinkers from the 12 position is not necessary for the purpose of holding down the fabric. It is merely done for forming selvages, which will be discussed in later articles.

As the camshaft moves to its position 14, the needles

Previous instalments of this series on full-fashioned hosiery machines and their operation appeared May 31, July 26, Oct. 4, and Nov. 29, 1930; March 21, April 25, July 11, Aug. 8, Sept. 19, Nov. 28, and Dec. 26, 1931; and Feb. 13, March 26, and May 21, 1932. Clippings of Mr. Miller's first series of articles on the past, present, and future of knitting mechanism are no longer available, but the articles are all included in Mr. Miller's book, "Principles of Knitting," recently published by the McGraw-Hill Book Co., 330 W. 42nd St., New York.

move upward and toward the points, as shown in Fig. 49. By examining the needle up-and-down motion 4 in Fig. 51, it will be seen that the roller 4 commences to move down its cam decline, thereby moving the needles upward. During this same movement to 14, Fig. 51, the roller 2 continues to move up its cam incline, thereby transmitting to the needles their movement toward the points, but not actually moving the needle hooks in relation to the points other than to flex the points and needles so they will with greater certainty bury their hooks as far as possible inside the point shanks.

The sinkers in this movement continue moving toward the needles and points, as shown in Fig. 49. By examining the catch-bar in-and-out motion, numbered 3 in Fig. 51, it will be seen that the roller 3 of this motion in the movement to position 14 continues to ride up its cam incline, reaching the start of a radial rest portion of its cam, having therefore projected the sinkers between the points as far as necessary during the narrowing.

In the same movement of the camshaft to 14, the points move upward, as shown in Fig. 49. By examining this motion numbered 5 in Fig. 51, it will be seen that the roller 5 has commenced moving up its cam incline, thereby raising the points. The knock-over bits remain in their position 13.

Points and Needles Flexed

View 14, Fig. 50, shows the position of the parts at the end of the camshaft movement to 14. It will be seen that the needles have moved upward and toward the points enough to flex both the points and needles, thereby insuring that the hooks of the needles will be buried as far as possible in the groove of their respective points, so that, during the upward movement of the needles, they will pass readily into the loops on their respective points. It will also be noticed that the points have moved upward during this movement, and care should be exercised to see that the relative upward movement of the points and needles is so timed and to such a degree that the needle-and-point register relationship shown in Fig. 49 is not disturbed. It is particularly desirable that the point be still sufficiently low with respect to its needle beard to prevent the inner curve of its groove contacting with the lower outer curve of the needle beard.

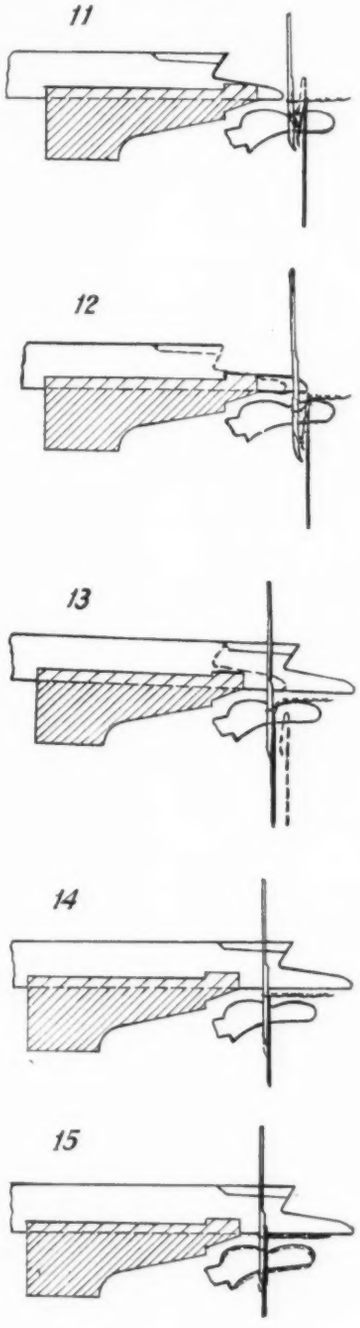
If Points Too Low

If by chance the points were adjusted too low, the tendency would be to force the heads of the needles out of their completely buried position in their respective point grooves, which would result in the heads of the needles contacting with the heads of the loops of the preceding course held by the points. Upon later upward movement of the needles, it will also be noticed in examining view 14, Fig. 50, that, due to this movement, the fabric is also moving upward in a direction toward the sinkers and away from the knock-over bits. The sinkers have come forward even farther between the points than in the previous position 13. This sinker movement, however, has no bearing upon the loop transfer; but it is very important in so far as selvage formation is concerned.

As the camshaft moves to its position 15, the needles move upward and slightly away from the points, as shown in Fig. 49. By examining the needle up-and-down motion 4, Fig. 51, it will be seen that the roller 4 continues to move down its cam decline, coming to rest on a radial rest portion of its cam. During this same movement to 15, Fig. 51, the roller 2 remains on the extreme throw of its cam in about the same position as in 14, although a slight fall of the roller takes place, which results in a slight lessening of the flexing of the needles and points.

The sinkers in this movement remain in the position 14, as shown in Fig. 49; and by examining the catch-bar in-and-out motion numbered 3 in Fig. 51, it will be seen that the roller 3 of this movement to 15 remains on a radial rest portion of its cam, so that no movement is imparted to the sinkers.

Fig. 50. Movement of points, needles, sinkers, and knock-over bits, in full-fashioned narrowing. Views 11 to 15 inclusive



Movement of Knock-Over

In this same camshaft movement to 15, the points move upward, as shown in Fig. 49. By examining this motion numbered 5 in Fig. 51, it will be seen that the roller 5 continues to move up its cam incline, thereby raising the points. The knock-over bits move upward slightly, as shown in Fig. 49, due to their roller 6, forming part of the knock-over-bit motion 6 (Fig. 51), coming in contact with its cam rise. This is the first time during the movements of narrowing that the knock-over bits have moved. While it would appear from the cam drawing as though such movement would have taken place in the movement of the camshaft from 14 to 15, this is not the case for the reason that the roller 6 is normally held out of contact with its cam, as shown in Fig. 51.

Reason for Clearance

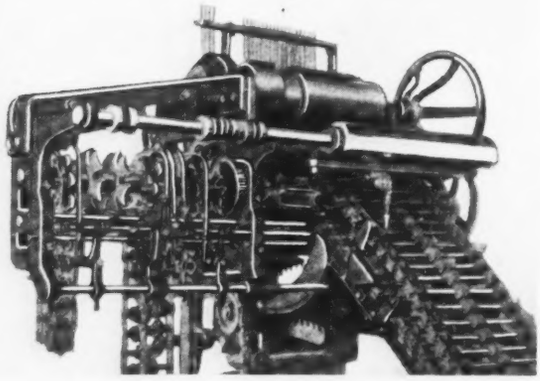
This clearance between the roller and cam is necessary, as noted in previous articles, to permit the operator to shift readily the knock-over-bit rollers 6 manually from their regular knock-over-bit knitting cam to the cam shown in Fig. 51. The object of this is to hold the knock-over bits in a low position at the time the welt rakes for commencing the knitting of a new set are inserted between the needles, knock-over bits, and sinkers.

(To be continued.)

Hints for Loomfixer

ON SETTING WOOL-LOOM STOP AND HEAD MOTIONS

By Benjamin F. Hayes



MANY improvements have been made in the knock-off arrangements used in connection with the filling stop motion, but in many instances they are not necessary. There are many different systems of knock-off levers, but they all have a common purpose—to release both the brake and shipper handles before the No. 8 horseshoe-shaped casting drops below the surface of the main casting of the filling stop motion.

One of the most satisfactory arrangements I have ever seen consisted of two levers, one of which first relieved the shipper handle, and then the other relieved the brake. I was so favorably impressed with this system that I installed it on the section on which I was working and was very well satisfied with the results.

I used the regular casting that was employed to release the shipper handle before the brake attachments were applied to the loom. This casting was made to rest on the projection of the No. 8 casting. This projection was wide enough to accommodate both levers, and I arranged it so that the lever controlling the shipper handle was a little higher than that controlling the brake handle. The result was that the shipper handle was released before the brake, meaning that the loom was stopped with less energy and more quickly than before. With high-speed looms it is practically essential that the shipper handle be released before the brake is applied; otherwise there is apt to be considerable breakage of lay ends. Most modern looms are provided with some arrangement of this nature, but there are still many looms which would be benefited by this change.

There are two distinct types of warp stop motions, each of which has several sub-classifications. I refer to mechanical motions and electrical motions. There is really very little to say in regard to these, as they are both quite simple in nature and require very little fixing. Both systems have their advantages, and it is really a matter of personal opinion tempered by local conditions as to which is the best to use.

I personally prefer the electrical type, as it seems to be the more simple of the two and appears to be more dependable. However, the mechanical type has an advantage over the other in that it is a single unit while the electrical is not. One difficulty sometimes experienced with the electrical stop motion is that a series of eight or ten looms may be supplied from the same source of power; and if this source fails, the entire section will be unprotected. Neglecting to turn on the current at the beginning of an operating period is also likely to produce serious results.

I next want to discuss the driving of the harnesses. It may appear to the reader that I am wandering about rather haphazardly; but if he will refer to my article on March 19 and to those which are to appear in future issues, he will see that I am endeavoring to run through the whole gamut of a loomfixer's work and offer practical suggestions at each stage based on my rather wide experience.

Timing the lock knife which holds the vibrators in position is often termed "timing the head motion," because of its importance and also, no doubt, because it is the most difficult adjustment of the head motion. When the looms are new, these timing gears are equipped with pins, and all that is needed in timing is to set the gear so that these pins mesh with the divided teeth of the companion gear.

But loomfixers cut out these pins, and it becomes impossible to time the head motion by this simple method. When the loomfixer does this, it is because the gear on the end of the pattern-chain cylinder has slipped from its original position and put the head motion out of time. The reason why he does not prefer to place the slipped gear back in its original position is not wholly evident. Probably the practice of cutting out these pins has been handed down or passed along by other loomfixers, and present incumbents fail to question its advisibility.

The large gear on the end of the pattern chain is arranged to slip when the pattern-chain is caught in order to avoid breaking of either the gear or the chain—both of which are expensive. At one time this gear was fastened to the pattern-chain cylinder by a soft-pointed set screw; and when the pattern-chain became caught, the soft point of the screw would be cut off, freeing the gear and preventing the breakage of any expensive parts. After such breakage, the set screw was supposed to be replaced by another of the same type. Often, however, the loomfixer would merely tighten up the set screw at the position to which it had slipped; and the next catching of the head motion would cause costly damage. However, this soft-pointed set screw has been replaced with two set screws that will slip under adverse conditions. The large gear is now clearly marked with lines, and so is the shaft which carries it. It is therefore easy to set the large gear accurately, and there is no excuse for cutting out the pins on the timing gears. I shall continue this discussion of timing the lock knife in a later article.

Rayon's Basic Structure

DISCUSSED BY COMMITTEE D-13

NEW facts regarding the internal structure of rayon recently disclosed by world-wide research were explained to Committee D-13, the textile committee of the American Society for Testing Materials, during the society's annual meeting at the Chalfonte-Haddon Hall in Atlantic City last month. Several papers were presented on this occasion, officers were elected for the ensuing two-year term, and several new textile standards and revisions in old standards were recommended for adoption. The paper on rayon structure and properties, which we are not quoting verbatim, was presented by Dr. Harold De Witt Smith, of A. M. Tenney Associates, New York.

Rayon is a carbohydrate, said Dr. Smith, and can be broken down by hydrolysis to glucose. Chemical research has intimated that by the removal of the equivalent of one molecule of water from the glucose molecule, the glucose residues may be joined to form long chain structures. Physical research on cellulose fibers confirms this structure.

The X-ray discloses that the long chains comprising in native cellulose some 100 to 120 glucose residues cling together in parallel to one another in bundles of some 50 to 60 chains. These bundles are called micellae, which in the native fibers are packed in parallel to one another somewhat like the bricks in a wall. All of the vegetable textile fibers appear to be built up basically of bundles of long elements, rather well oriented with respect to one another, these bundles forming larger ones, and these still larger.

When this neat cellulose structure is dispersed by preparing a spinning solution for rayon manufacture, the bundles are split apart, chiefly in a longitudinal direction. When the solution is forced through the spinnerette into the coagulating medium, a considerable amount of reformation into micellae occurs. In the old viscose method of spinning, with little or no stretch, the micellae lie criss-cross in a matted mass. The stretch type of spinning pulls the micellae into line with increased orientation. The rayon filament differs from natural fibers in that the micellae are smaller and less regular in size and form a more imperfectly arranged network.

Of the three bonds, namely, the longitudinal bond between the glucose residues in a chain, the lateral bond between the chains in a micella, and the lateral bond between the micellae—the latter is weakest. Hence the latter governs the strength of the filament, and the strength is proportional to the area of mutual contact between the micellae. For this reason, although we can control the spinning with respect to either strength or elongation, we cannot control both of these factors arbitrarily beyond certain narrow limits. The excellence of rayon is determined by the balance between strength, elongation, and other characteristics, and therefore it should be understood that the degree of orientation is not in itself an index of quality.

The eventual cessation of elongation when a light load is hung on a rayon filament or yarn is undoubtedly due to the improved orientation of the micellae caused by the stretching. When the load is removed, the filament makes an immediate partial recovery and then creeps back slowly toward its original length, which it will eventually reach if the elastic limit has not been exceeded. When a filament is held to a small and constant extension, a change for the better in orientation apparently occurs and the fiber will not recover its original length until immersed in water, which swells it and restores the original orientation. This causes a change in the rigidity of the filament, which will bend or crimp differently from its neighbors in the formation of the weave and hence cause a difference in light reflection—appearing as a shiner or streak. This may not show up until the fabric has been finished, since, when wetted out, the relaxed yarn will contract more than its neighbors. Although increased orientation and increased rigidity go hand in hand for a given filament size, the increased fineness attainable by stretch spinning tends to maintain flexibility.

The amount of moisture absorbed increases as the orientation of the micellae is decreased and decreases as the hydroxyl groups are replaced chemically by acid radicals. These observations indicate that the water molecules are attracted and held by the residual forces of the hydroxyl groups along the exposed sides of the micellae. The capillary action of the pores in the micellar network is also apparently a factor. The capillary effect accounts for the well-known hystereses, the water molecules being locked in the pores as the pore spaces at the surface contract during drying. Consequently, when filaments approach equilibrium with a given humidity from the wet side they show a greater regain than when they approach from the dry side.

Absorbed moisture pries the micellae farther apart and so reduces the mutual attractive forces. It acts also as an internal lubricant, enabling the micellae to slide and shift more easily. Hence wet rayon has lower strength and higher elongation. It is also more plastic, and hence a certain degree of humidity is beneficial to textile processing. No softening preparation is superior to moisture in penetrating and softening the structure of cellulose.

In the election of officers, Prof. Herbert J. Ball, of Lowell Textile Institute, Lowell, Mass., and William H. Whitcomb, of Providence, R. I., were returned to the chairmanship and secretaryship respectively. B. H. Foster, head of textile laboratory, U. S. Rubber Co., Passaic, N. J., was elected first vice-chairman; and J. M. Weaver, General Asbestos & Rubber Co., New York, second vice-chairman. G. E. Hopkins, of Bigelow-Sanford Carpet Co., Thompsonville, Conn., was made permanent chairman of sub-committee A3 on wool. The addition of twelve new members was announced. The Mayflower Hotel in Akron, Ohio, was chosen as the place of the Oct. 20-21 meeting.

The following papers were presented: "Machine Test on Durability of Manila Rope," by N. C. Wiley; "Enzyme Action," by W. F. Edwards; "Atmospheric Control," by R. H. Brown; "Asbestos Textiles," by C. K. Dillingham; "Suter-Webb Cotton-Fiber Duplex Sorter," by R. W. Webb; and "Color Testing of Cotton," by D. Nickerson.

Preventing Mildew

IN SIZING AND FINISHING

By Karl M. Herstein, F.A.I.C.

MILDEWING differs from most textile troubles in that it is not directly caused by any sin of omission or commission by the manufacturer. It also differs in that one cannot state with 100% certainty when the fabric leaves the mill that it will or will not be affected by mildew. Some idea of the magnitude of the mildew problem is given by Govier in his report of an interview with Dr. Farrow of the British Cotton Research Association: "Mildew is one of the major problems of this research organization . . ." When mildew has been completely prevented, ". . . the world will benefit annually by a saving of some millions of dollars."

Ewing Galloway

By adding a suitable antiseptic to the finishing bath, we can be sure no mildew will develop in the fabric

The causative agents in mildewing are fungi which multiply by sporulation. In their growth they produce filaments (which penetrate the fabric on which they are growing and cause the damage) and they produce a sort of seed pod which bursts when ripe and spreads the seed broadcast. The seeds, called spores, carry the color, the visible sign of the damage, and are so minute and light that they can float long distances in the air to settle on and infect anything which is exposed to them.

With this broad description we can better define what is present on a mildewed piece of cloth. We see first a dull-colored spot which dusts somewhat under the finger, but resists washing and most other attempts to remove it. The spot consists of microscopic plants in all stages of development. There are minute filaments penetrating even the textile fibers themselves and twining around in all directions. There are spore caps full of spores and ready to break open. The fabric at the point of growth is naturally weakened, both because of the mechanical damage it has suffered and because some of it has served as food for the invading plant. While a fabric that has been damaged in this manner can, with care, be bleached and put to some use, its strength is less than before, and it would be most inadvisable to attempt to dye it. It hardly needs consideration to realize what a loss may be involved by such damage as this.

There is one factor which more than any other determines whether or not the spores will develop into any extensive damage. This is the moisture content of the goods. Other natural conditions, such as light and air, play their part in controlling the growth of mildew, probably more by their effect on the moisture content of the fabric than otherwise. Temperature and time, too, have their share in the total effect. The mildew organisms are slow growers, and will thrive best with a fair degree of warmth. Freezing will halt their growth entirely while it continues, and boiling temperature will kill the growing molds, but will not, except under special conditions, affect the spores. Mildew requires an appreciable time to develop to any considerable extent, although the time varies inversely as the temperature.

The mildew plants require proper food. Just what their sources of this food may be is not entirely clear, but it is known that they must have nitrogen compounds, as well as carbohydrates. They require air, but this is to be found in sufficient amount even in the core of a tightly packed bale. The minute amount of nitrogen compounds needed can readily be obtained from the impurities present in gray cotton fabrics or in the starchy materials used for sizing or finishing. Wool and silk, of course, are nitrogenous bodies in themselves and can be attacked directly by mildew.

It is thoroughly established that practically all fabrics are infected with mildew and that under favorable conditions this can develop with considerable resultant damage. It seems a simple matter of logic then, that the attempt should always be made so to regulate the external conditions that no growth of mildew will take place. Unfortunately, this is not always entirely practicable. Goods cannot be kept and shipped either in a refrigerator or in a drying oven. But they can be shipped with a moisture content so low that mildew cannot grow, and they can be so processed that the need for moisten-

ing agents in the finish to get a certain feel is eliminated. While this sort of precaution may not always be cheap, it will probably prove cheaper in the long run than either damage insurance or the settlement of damage claims.

The writer realizes keenly that 1% of extra moisture in a lot of goods means 1 lb. of water sold at fabric prices for every 100 lb. of goods sold. Yet he has also seen recently a quarter of a million yards of cotton broadcloth worth when made nearly a dollar a yard which must now be sold for what it will bring as a result of extensive mildew. He believes that no careful manufacturer will fail to prefer the precaution to the loss. Similarly, although the writer does not intend to include here a treatise on finishing, he believes that a soft, firm handle can be obtained on goods by the use, for instance, of tapioca starch without moisteners instead of cheaper starch with the help of such materials as glycerin or magnesium chloride.

In the preceding paragraphs an outline was given of what may be done to forestall a predisposition to mildew. However, that is by no means the limit of what can be done in this direction.

Mildews will not grow on properly poisoned material which otherwise would be excellent food. Hence, by adding suitable antiseptic agents to the warp sizing and finishing baths, we can be sure that no mildew will develop either in the gray goods or the finished fabrics. Some authorities insist that this treatment should never be omitted. For example, Bean says: "It is necessary to use some substance for preserving finished cloth from mildew. A large number of antiseptic substances are now in use, the most important of which are: chloride of zinc, sulphate of zinc, salicyclic acid, carbolic acid, cresylic acid, formaldehyde, thymol, etc."

The guiding principles to be used in the selection of a mildew-proofing agent have been laid down by the British Cotton Industry Research Association. As cited by Killheffer (*Amer. Dye. Rep.*, XVII, 14,526), they are given in Table I. In same article Killheffer indicates another attack on the mildew problem. After a careful and logical analysis of the requirements of a mildew preventive, a survey of the commoner materials so used with a list of the disadvantages of each, and some experiments with various newer materials, he concludes that Neomerpin and Neomerpin O meet the requirements of an ideal textile antiseptic. Neomerpin and Neomerpin O are trade names for naphthalene isopropyl sulphonic acid sodium salt and a mixture containing this compound. This product is widely sold under various trade names as a penetrating agent. Hence it appears that it is quite possible to combine the necessary antiseptic qualities with other useful chemical functions in a compound of double value in a finish or size. Hall reports another compound of particularly effective anti-mildew power on cotton goods, namely salicylanilide (trade name, Shirlan); and for wool, he recommends sodium silicofluoride. This compound is effective as a moth preventive, and so it, too, serves a double purpose.

Table I. Guiding principles in selection of a mildew-proofing agent

1. In order to obtain easy incorporation with the size, the antiseptic must be fairly soluble in water at the temperature of mixing.
2. After being added to the size or finish, the antiseptic must remain unchanged. If it is volatile with steam it will boil out; and if it is decomposed by heat, its antiseptic properties may be lost.
3. The color of the size or finish must not be altered by adding the antiseptic, unless the result happens to be favorable or can be counteracted easily by suitable tinting.
4. The possession of an odor may be very objectionable if it is imparted to the cloth.
5. Tendering of the yarn or fabric must not be produced, either by direct action as of strong acids or oxidizing agents or by decomposition on heating, which is generally recognized as the objection to the use of zinc chloride.
6. The dyeing and finishing properties of the yarn or fabric must not be affected.
7. The antiseptic must have no action upon those parts of the machinery with which it is likely to come in contact.
8. Safety in handling the antiseptic is essential.
9. There must be no action on the constituents of the size or finish which will affect the characteristic feel of the resulting fabric.
10. To be of practical value the antiseptic must be obtainable with ease in sufficient quantities and cheaply enough for regular use. Cheapness depends, however, not only on the price per pound, but also on the amount which must be used.

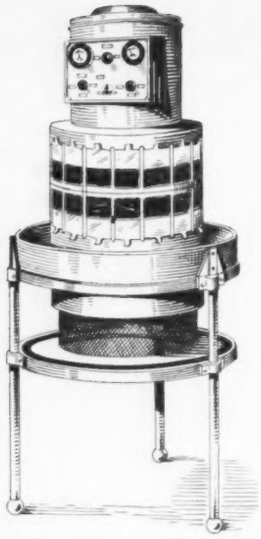
Table II. Factors to be considered in placing blame for mildew damage

1. The age of the mildew growth. (This is ordinarily only possible by an expert in the field of bacteriology.)
2. The chemical analysis of the fabric and of the finish or size on it for the presence of protein matter; of moisteners, such as magnesium chloride or glycerin; and for the presence of mildew preventives, possibly in insufficient amount.
3. The question of the moisture in the goods should be studied. From the record of shipped and received weights, of the external appearance of the packages, and of the distribution of the mildew growth it may be possible to decide whether the entire lot of goods was over-moist or this was only local.
4. The total extent of the mildew growth and the loss in strength of the fabric, as well as the amount and intensity of the staining, will be important as a measure of the damage.
5. In judging from the data assembled it should be taken as a premise that the presence of mildew is proof of excessive moisture at the point of attack. It must be decided whether this excessive moisture was general throughout the goods, accidental in certain spots, accumulated in those spots due to temperature influences, or came from outside.

It appears then, that with due care in the manufacture of goods, and with the possible employment of any of a variety of preventive agents, protection from mildew may be reasonably assured.

It may become the duty of the plant chemist or technician to allocate the blame for mildew damage. Usually it is not easy to place a diagnosis of this kind on an absolutely firm basis; but a complete circumstantial case, well knitted together, will often enable the active mill man to support the claims of his employer. There are so many possibilities that only a complete and thorough accumulation of evidence can lead to or support a valid conclusion. Among the facts which can be determined are those shown in Table II.

A study of all these points should lead to a tenable conclusion. And even if no other benefit arises, it should serve to correct the practice which led to the damage.



Fast Dyes

PRESENT AND POTENTIAL USES

IN the last decade dyestuff manufacturers have made remarkable progress in the production of fast dyes. These colors now find wide application in the printing and dyeing of cotton and rayon piece goods, but have not yet found their true place in processing woven fabrics of silk and wool, yarns of various types, and hosiery and other knit goods. While there are certain impediments to the more extensive use of fast dyes, the difficulties are not insuperable. And those plants which first solve the problems and place themselves in a position to supply the ever-increasing demand for fast-dyed fabrics will profit the most.

Requirements Vary With Use

Fastness requirements vary considerably according to the use to which the fabric is to be put. Thus, it has been pointed out that in the case of draperies, fastness to light is of major importance, fastness to washing of secondary interest, and fastness to perspiration is unimportant. Again, in the case of linings, fastness to perspiration is of primary importance, fastness to light of secondary interest, and fastness to washing is unimportant. It is not in the province of the present article, however, to attempt a classification of various fabrics according to fastness requirements. Rather it is the purpose to consider briefly the present applications and future possibilities of fast dyes, limiting the discussion to the following classes of colors: (1) vat, (2) indigosol, (3) naphthol, (4) aniline black, (5) sulphur, (6) developed, and (7) special dyes for cellulose acetate.

As a class, the vat dyes possess the best all-round fastness properties, and selected colors of this group afford a wide range of shades which answer reasonably well all practical demands for fastness. These dyestuffs are now used extensively for dyeing and printing cotton and rayon in the form of woven fabrics, and are employed to a lesser degree for dyeing these materials in the form of yarn. Concerted efforts on the part of manufacturers and users of vat dyes should be directed toward the development of satisfactory methods for applying these colors to silk, wool, cotton-rayon mixtures, and other unions, as well as to knit goods and pile fabrics of various types. At present the use of vat dyes on these latter materials is small, but the potentialities are large.

Indigosols, the water-soluble, vat-color derivatives, are steadily gaining importance in printing cotton, silk, rayon, wool, and mixed goods, giving shades of the same fastness as those obtained with the corresponding vat colors. Their possibilities for dyeing both yarns and piece goods of cotton and rayon—and more particularly silk and wool—are many. In addition, the methods by which the indigosols may be applied make these colors of more than academic interest for dyeing hosiery and other types of knit goods.

The naphthols—including the Rapid Fast Colors and the Rapidogens—have been well received by dyers and printers of cotton, rayon, and cotton-rayon mixtures. Fullest use of these colors, however, requires their wider adoption in dyeing cotton and rayon in the form of yarn. Likewise, the naphthols offer a fruitful field for cultivation by dyers of cotton and rayon hosiery and other types of knitted fabrics.

Aniline black has a well-defined place in dyeing and printing of cotton and rayon. There is some possibility of using this color on the animal fibers, but development of practicable methods of application to cellulose acetate is apparently a more pertinent problem.

Sulphur colors need no introduction to the cotton piece-goods dyer. There is an opportunity, however, for greater use of these dyes on rayon yarns and fabrics and on cotton and rayon hosiery. Development of improved methods of application to the animal fibers is not impossible and would probably lead to a somewhat larger consumption of these dyestuffs.

Where fastness requirements are not particularly stringent, the developed colors are often employed to advantage on piece-goods of various types. As yet, however, dyers of hosiery and underwear have not made the fullest use of these dyestuffs.

Special dyestuffs for cellulose acetate have found a ready reception, and no doubt the use of these colors will expand naturally with increased consumption of acetate yarn, immunized cotton, etc.

Dyer Must Select

No attempt has been made to cover exhaustively all of the present applications of fast colors. Likewise, the grounds for their more extended use have only been scratched. The printer and dyer, knowing the fastness requirements of a particular fabric, has only to select the dyestuff which will best satisfy those conditions. If a practicable method of application is not immediately available, every effort should be concentrated on the development of one.

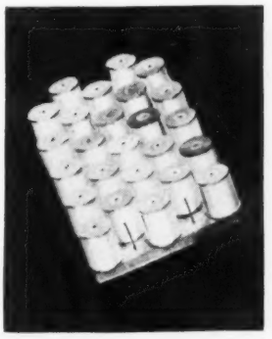
Steaming Bobbins

THEIR PART IN THROWING HOSIERY TRAM

IN STEAMING hosiery tram it is often noticed that the innermost layer of silk is tendered. The tendering occurs even at low temperatures (say 150° F.), and the remainder of the silk is unharmed. Another defect which frequently occurs during steaming is the formation of hot-water spots. These hard spots do not boil out, but cause bars in the hosiery which cannot be removed in boarding.

The theory has been advanced that tendering of the innermost layer of silk (when steamed on a metal bobbin) may be due to the heat of the metal or possibly to the tension exerted by the expansion of the metal. It has also been suggested that the damage is due to the silk on the innermost layer of the bobbin being wound somewhat looser than the silk above it. The silk contracts during the steaming operation; and the upper layers, which are more tightly wound and contract to a greater extent, may cut the innermost layer. Many authorities believe, however, that in most cases tendering can be traced to contamination of the silk with iron stains. The rust may come from steam pipes, iron heads of bobbins, iron gudgeons used to hold the heads of bobbins, etc. Hot-water spots are caused by the temperature in the steaming box being over 180° F.; and by hot water dripping on the silk, melting the sericin, and causing it to dry stiff and hard.

It is recognized that proper choice of steaming bobbins is important in preventing a recurrence of these troubles. For this reason we have asked several men experienced in silk throwing to express their preference as to the type of bobbin best adapted for steaming hosiery tram. A summary of their replies is presented herewith. It will be noted here that while there is no unanimity of opinion in this matter, there are some very definite ideas as to the factors to be considered in selecting steaming bobbins. We shall be pleased to receive from any of our readers further comments on this subject.



SUMMARY

"Wooden bobbins are, as a rule, the shortest-lived; but if the flanges, gudgeons, rivets and other parts are made from non-corrosive metals, these bobbins (considering the price element) will give satisfactory service. If the gudgeons inside the barrel of the bobbin are made from ordinary steel or iron, in time the wood will crack, the metal rust, and rust seep through to the silk. These bobbins should be inspected frequently to avoid damage to the silk. . . .

"Wooden bobbins with Bakelite heads are frequently used. If kept free from nicks and dents, they give little trouble and, since they do not retain heat, are particularly effective in preventing hot-water spots. . . .

"The bobbin made with a cast-aluminum head and a stainless-steel barrel is probably the lightest steaming bobbin that can be obtained and one that is very satisfactory. In the case of steaming bobbins made with stainless-steel barrels, in time the lap or seam in the metal may give way, and this causes the silk to catch on the roughened edge of the lap and become cut or broken. For this reason this type should be inspected periodically. . . .

"All-metal bobbins can be cleaned easily and kept in good condition. However, aluminum is attacked by strong alkaline cleaners, etching and roughening it. The silk catches in these rough places; and during winding and unwinding, the filaments are broken. Use of cleaning agents which attack aluminum should be avoided when this type of bobbin is employed. . . .

"All-metal bobbins made from a high-nickel stainless-steel, are durable and do not corrode readily; and if the stainless-steel flanges are polished, any small particles from the steel rollers used in rolling out the sheets will be removed. . . .

"Bobbins composed of a stainless-steel flange, wooden barrel, and brass or stainless-steel gudgeons have been found satisfactory for low-temperature steaming. This type lasts for a considerable period of time; it is heavier than most stainless-steel bobbins, but the initial cost is lower. . . ."

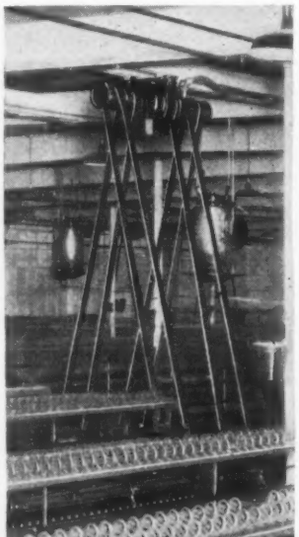
In addition to the bobbins discussed, others employed in steaming include those made wholly or in part of vulcanized fiber, cadmium- or chromium-plated steel, galvanized or tinned iron, and steel which has been Parkerized or Sheridized, as well as those made entirely of Bakelite. With this wide array—if he will consider carefully the initial cost; probable serviceable life; resistance to corrosion, chipping, and warping; heat-retaining capacity; and other properties mentioned above—the throwster should have no difficulty in selecting a type which will prove satisfactory under the particular conditions encountered in his plant. In this way he will be able to prevent the defects mentioned earlier in this article.

Group Drive—

By F. H. Willard
President, Graton & Knight Co.

ITS ECONOMIC ASPECTS

◆ *Always of interest to textile men is a discussion of the methods of driving machinery. At a recent banquet of the Omicron Pi Fraternity of Lowell Textile Institute, Mr. Willard argued for the group drive, citing figures compiled by Victor A. Hanson, of the Mechanical Power Engineering Associates, as a result of a study made in two departments of a large manufacturing plant. An abstract of Mr. Willard's timely address follows:*



DURING recent years the electric motor has been vastly improved and applied to driving shafts for groups of machines—thereby eliminating the waste of power through long lines of shafting and innumerable countershafts that were necessary equipment for transmitting power from one place to another in the plant, without serving any other useful purpose. This development resulted in savings of capital expenditures for large belts, superfluous shafting, pulleys, hangers, etc. Likewise, large savings were made in capital investment, power consumption, maintenance of equipment, etc. Increased production resulted from the opportunity to group machines for more direct routing of goods in process and more convenient movement of production from one process to another.

All this created greater profits per dollar of capital investment, and was correspondingly popular. This popularity helped to extend the use of motors on individual machines, and small-sized motors were improved. However, industrialists failed to measure the largely increased capital investment, cost of maintenance, and power consumption per unit of production.

Where Unit Drive Is Advisable

We do not maintain that there is no use for unit drives; on the other hand, there is a very definite application for them. Individuality is the major feature of unit drive, and when individuality is worth the increased operating cost, unit drive is advisable. On the other hand, present economic conditions have now forced all parties interested in this situation to study carefully every phase of production costs, and they are finding opportunities for material savings in the transmission of power. A study made recently in a large manufacturing plant in which group drives are being installed and operated furnishes an illustration of what can be accomplished.

In one department of this plant eight motors are required, operated by a combination of group and unit drive. The cost of these motors and control was $1,390. The wiring for this equipment cost $1,235. The three line shafts with ball-bearing hangers, steel stringers, pulleys, belts, etc., cost $2,261. To convert this department to unit drive would require 28 motors, costing with control equipment, $3,407. The wiring for the motors would cost $2,947; the cost of adapting these machines to motor drive, which by the way is frequently overlooked, would be $11,598. This figure also, is almost identical to the difference in cost of motor-driven and belt-driven machines if they are purchased new without motors.

In another department, with group drive, ten motors are required, costing with controllers $1,525. The wiring for this equipment costs $1,082. The nine line shafts complete with steel stringers, etc., costs $5,002. To convert this department to unit drive would require 67 motors costing with control equipment $5,366. The wiring for these motors would cost $5,976. The cost of adapting the machines to motor drive would be $13,675.

Thus, the cost of the present combination of group and unit drive for the two departments is $12,495, as against $42,971 for unit drive. The annual operating costs show a similar difference. Fixed charges, including depreciation, interest, taxes and insurance, amount to $1,874 for the group drive, and $6,445 for unit drive.

The total maintenance cost on these two departments for the year was $43.68. The maintenance cost for unit drive based on actual costs in the same plant would be $1,080. The power cost for these departments was $1,350; the power factor is 85% and the efficiency weighted for motor size is 86.8%.

The unit-drive efficiency when weighted for motor size would be 74.3%, or a difference of 12.5%. The line-shaft losses average 3.5%, which leaves a difference of 9%, adding $121.58 to the power bill.

Difference in Power Bill

It so happens that the power company furnishing this plant has no power-factor charge; but if this plant were located in the territory served by a neighboring company, the developed power factor of 59% would add $361.50 to the power bill. Therefore the annual operating cost for the present combination of group and unit drive is $3,268. The operating cost for an exclusively unit-drive installation would be $9,359. This difference in operating cost is conservative and, in fact, is even greater in other types of plants being studied at the present time.

Price-Cutting Orgy

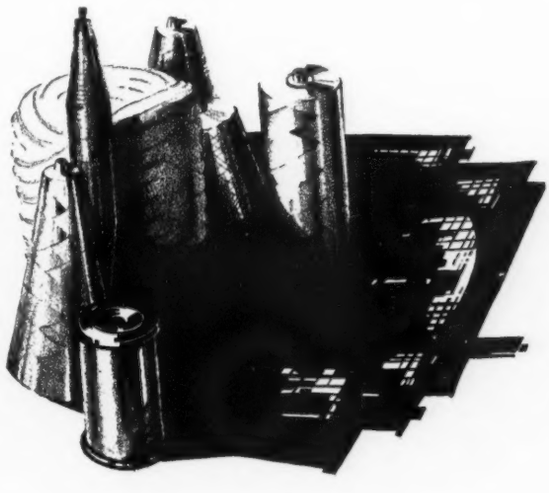
THREATENS RAYON INDUSTRY

CLOUDS are gathering on the horizon for the rayon industry. A minute study of the price-cutting pyrotechnics of recent weeks reveals a competitive spirit among producers which might be either belligerency or panic, but is probably a combination of the two. First came the shutdown of viscose process plants by some companies, a move calculated to inspire confidence; then the price reduction to 65c. which killed confidence in the bud. A period of reckless below-list selling followed, in which virtually everyone joined. Stock position and declining demand attributed to silk competition, put fear in the hearts of producers, and there was a mad rush to move yarns. Some suspended price-lists; others sold below their announced levels. Unquestionably certain firms offended more seriously than others in underselling, but it is wasting breath to dwell upon that now.

The climax came June 20, when Tubize Chatillon Corp., for the first time in its history, initiated a price reduction, bringing 150 denier down to a new low level of 55c. Next day Viscose Co. duplicated Tubize levels on the 150s, but underquoted the new Tubize price on 75 and 100 denier, first quality. The situation then found Viscose selling the 75s at 80c and the 100s at 65c, against the Tubize price of 85c for 75 denier and 70c for 100 denier. Similar revisions by other producers followed.

There is no question that the present situation finds the rayon trade at a critical point. The Tubize Chatillon Corp., officially ascribed its reduction to "chaotic conditions in the market," and buyers at first welcomed the revision as constructive since it merely put an official stamp on prices which had already existed sub rosa. It was joyfully acclaimed "the price cut to end all price cuts." But the keener minds are not so optimistic, and this applies alike to buyers and sellers. Price-cutting rarely, if ever, makes for confidence—instead it makes for suspicion and the buyer hesitates, apprehensive of another cut. The policy, which the trade attributes to Tubize, of determinedly fighting under-selling, is sound. Better a low official list which is true to trading than a higher official list which is perpetually and generally underquoted.

The present spirit in the rayon industry is sinister and unhealthy and points to a costly price-cutting war, unless it is caught in time. The co-operative trend, which promised so well last spring, has vanished into thin air. Assuming Tubize holds firmly to its policy of making the list conform to actual levels—which indeed is the only sound policy—what will happen if competing firms sell below the new low of 55c. for 150s? Present prices now are within speaking distance of production costs for everyone—and any further reduction in output will raise costs to a point where most of the trade will be selling at a loss.



Cut-throat competition is no novelty to the rayon industry, but the present trend is more serious, because more general than any that preceded it. Hitherto, the weakness was centered on one or another division, but as a rule a sufficiently large part of the trade held firm, to keep the industry fairly steady. It was this fact of localized price-cutting which enabled the Tubize Chatillon Corp., producing by three processes, to maintain its enviable position of detached onlooker, following reductions, but refraining from initiatory action.

Previously, the keener competition and cut-throat selling existed between two groups broadly speaking, with the major companies operating more or less harmoniously together. This cooperation among the latter saved the industry from disaster many times, by supplying the needed stability. Today there are signs that some of the major companies are pitted against each other. The underselling through the latter part of May and the various price cuts in June can be explained no other way. This aspect is so serious as to more than offset the advantage of wider markets, created by the lower levels.

The producers must act quickly, if they are to avert finding themselves in a condition from which it may take years to recover. A new and more honest price policy is essential. More shutdowns are essential; plants remaining open must be restricted to the absolute minimum output. Present stocks are estimated at between 25,000,000 and 30,000,000 lb. This is an impressive figure considering current demand, but the problem it presents is not insurmountable. Forced liquidation must be reduced to the minimum. But above all, let us have open honest prices. Rayon's stability today is nothing more than a word. The advantages which firm rayon enjoyed over fluctuating silk last spring can be retrieved if each producer—and *all* producers — definitely determine not to undersell. These words have been used before, but they assume new and grim significance now, as the alternative is ugly. Any sharp drop below the 55c. level will find the industry in the red.

Indeed, there were reports in mid-July that certain firms already were selling under that figure.

In normal times cut-throat is bad for all concerned, but the participants can survive. In times like the present it leads but one way—to chaos.

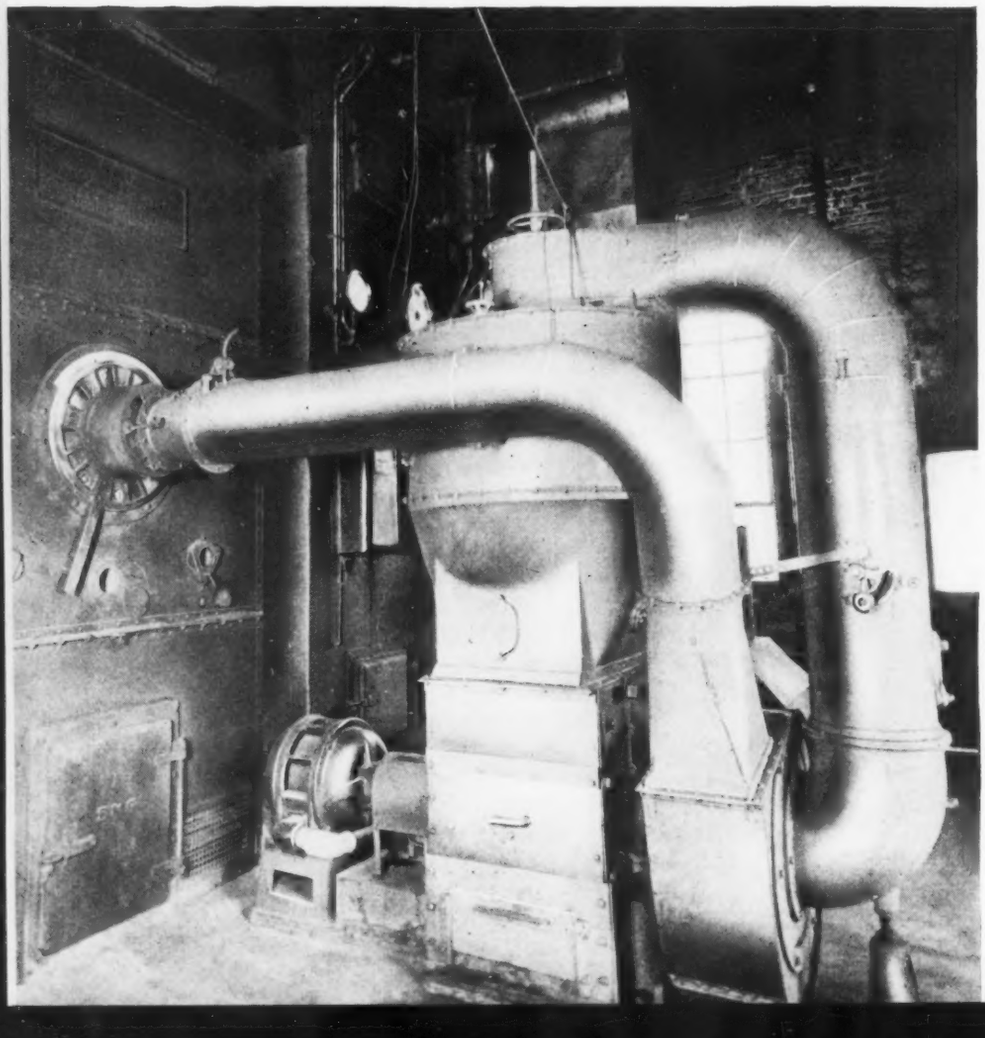
New Type of Boiler

INCREASES POWER-PLANT EFFICIENCY AT CARON SPINNING CO.

By Karl C. Schmidt

FEATURES heretofore incorporated only in large utility and industrial installations are embodied in a steam generator recently put into service at the Caron Spinning Co., Rochelle, Ill. This company, which is engaged in the spinning and preparation of worsted and rayon yarns for knitting purposes, has a power plant carrying an average steam load of approximately 10,000 lb. per hr. for power generation, and from 0 to 15,000 lb. for process work. This demand had formerly been supplied by the continuous operation of two horizontal return-tube boilers—one 72 in. x 20 ft., 220 hp., stoker fired; and one 72-in. x 18-ft., 150-hp., hand-fired unit. While the stoker-fired unit was a more or less recent installation, the other had been in operation for some years, and had lost its usefulness through caustic embrittlement of the boiler shell.

Front view of new boiler at Caron Spinning Co., showing pulverizer, with instrument panel in background.



In order to increase the steam-generating capacity and the operating efficiency at this plant, the hand-fired boiler was replaced with an S & G steam generator, a new type of low head-room, two-drum, bent-tube boiler unit with integral water walls. This new boiler, set in the same space and on the same supports used for the old unit, presents a radical departure in design from the ordinary conventional type of bent-tube boiler. As will be seen from the accompanying illustrations, the drums, instead of being placed across the setting at right angles to the center, are parallel to the furnace and at one side. A double row of tubes which completely encircles the furnace increases the radiant heating surface and supplies protection for the walls of the setting.

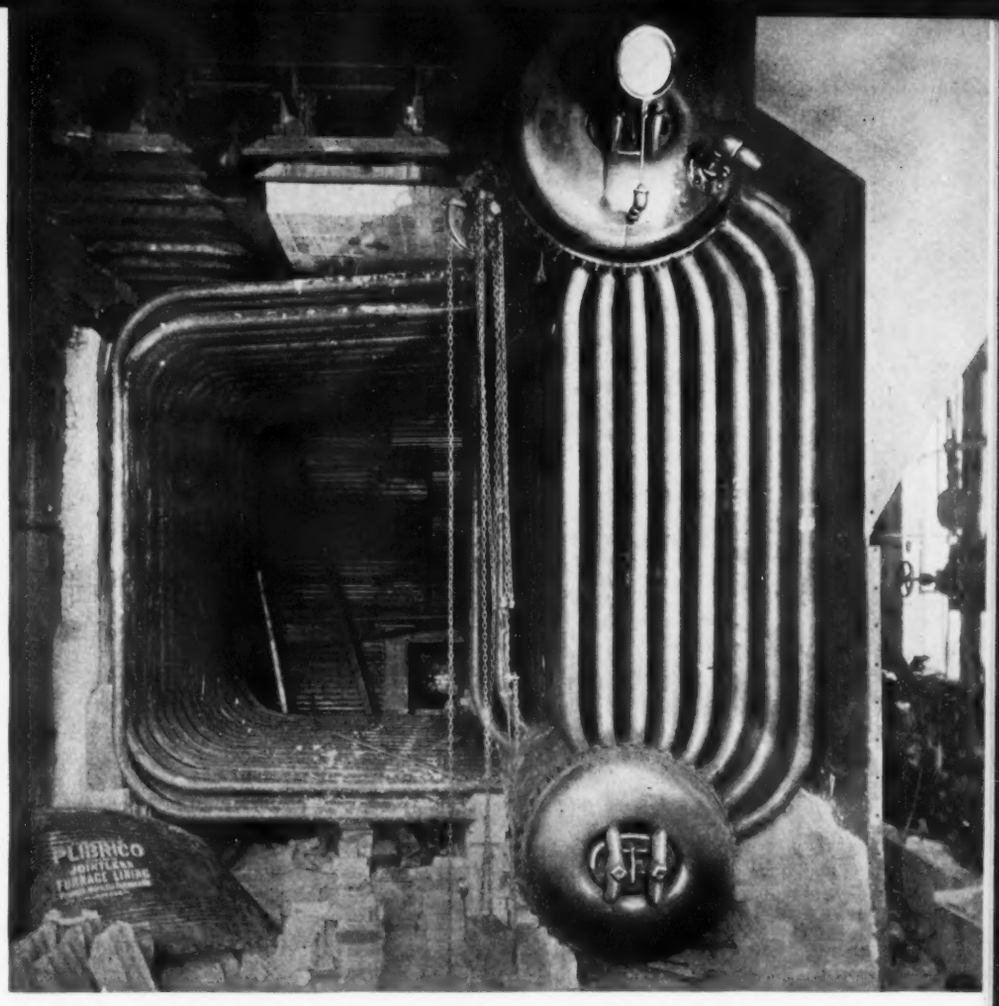
The boiler may be considered as having four distinct parts—the radiant, superheater, convection, and economizer sections. There is a heating surface of approximately 3,000 sq.ft., 40% being in the radiant furnace and 60% in convection surface. A longitudinal refractory baffle extends from drum to drum, forming a partition separating the radiant furnace from the convection bank. A single cross-baffle, extending downward from the upper drum, serves to prevent the gases from short-circuiting any portion of the convection tubes, and insures removal only of the colder gases at the bottom of the convection bank.

The unit is fired by a Strong-Scott Unipulvo, having a maximum capacity of 2,500 lb. of coal per hour. The pulverizer unit is so placed that the flame and hot gases travel directly through the center of the radiant furnace section to a large refractory-lined combustion chamber and ash pit at the rear of the setting. From here the course of the gases is reversed, being directed forward between and parallel to the drums. Since the entire gas travel is at right angles to the tubes, there is insured a maximum rate of heat transfer.

The design of the furnace provides for an ample refractory-lined

pre-furnace which insures thorough ignition. The walls of this ignition section are battered to reflect heat to the tubes, thereby preventing reverberation of radiant heat and the consequent burning of the walls. The radiant heating surface is from three to four times that of the older standard types of boilers; the total furnace volume and gas travel being approximately doubled. The average gas travel, before it enters the convection tubes, is nearly 30 ft., while the furnace volume included in the water-cooled furnace and the rear combustion chamber is about 2,180 cu.ft.

The setting is steel cased and thoroughly insulated. Plibrico jointless firebrick was used on all furnace walls. Paneled wall sections and the staggering of furnace tubes supported by special removable tile make it possible to replace any tubes without disturbing other tubes, wall sections, or baffling. A single Marion soot-blower element, running longitudinally of the convection section, effectually cleans the tubes. The soot blower and other control instruments are mounted on a steel panel formed by the pilaster-like casing covering the drum side of the boiler.



Construction view of boiler from firing end showing water-cooled furnace at left and convection surface and smoke outlet at right.

The S & G generator is designed primarily for pulverized coal, gas, or oil firing. However, by constructing a low bridge wall across the radiant furnace and slightly modifying the radiant tubes in front of this bridge wall, it can easily be adapted to stoker firing without sacrificing any combustion space or length of gas travel.

Illinois, Franklin County, screenings, of 1½-in. size, is the fuel being used at present. Air for combustion enters registers in the front casing and is drawn through tile passages beneath the floor, up the rear and side walls, and back across the suspended arch to the pulverizer. This not only affords air-cooled furnace walls and floor, but raises the temperature of the air entering the pulverizer to something between 200 and 250° F. This circulation of air about the furnace protects and lengthens the life of the refractories, while the pre-heated air entering the pulverizer assists in drying the coal and facilitates pulverization and combustion.

Feed water enters at the head of the upper drum, and by means of a box-like baffle, is directed to the lower drum through the outer two or three rows of tubes. A partition in the lower drum forces the water into tubes which return it to the upper drum where it passes under a second partition and enters the main circulation of the boiler. The tubes in front of these drum partitions form a true integral economizer. The turbulence in the upper drum, caused by the rapid circulation through the radiant furnace tubes and by steam liberation, is confined to that portion of the drum to the rear of the pre-furnace by the above-mentioned partition extending across the steam drum. There is a cut-out portion in this partition below the water line which permits equalization of the water level, while above the water line the partition is slotted to provide for the passage of steam to the forward end of the drum. Deep leg channels suspended back of each slot act as a steam purifier. The steam leaves the generator through a standard dry pipe in the non-turbulent end of the drum.

Steam generated in the old installation carried solids into the dye mixtures, resulting in acid steam and discoloration of the dyes. The loss of dyes would frequently amount to several batches a day. With the new installation, this loss has been almost wholly eliminated. The hydrogen-ion concentration of condensate varied from 4 to 10 with the old installation; while with the new it varies only from 8.2 to 9.

As measured by a Republic steam flowmeter, the new installation has been operating at daily loads exceeding 200% of the nominal boiler rating. The flue-gas temperatures range from 450 to 485° F., and Hays instruments show an average of 13 to 14% of CO_2. These latter figures show a difference of about 100° F. lower in the temperature of the exit gases, and about 5 to 6% higher in CO_2 than was obtained with the old unit.

The primary purposes of the design of this type of generator are to permit greater capacity with limited headroom, to provide increased radiant surface without the expensive water walls, and to supply an adequate furnace with greater length of flame and gas travel. That these purposes have been accomplished, is evidenced by the fact that peak loads of 850 boiler-horsepower have been developed in the space formerly occupied by a 72-in. x 18-ft. horizontal return-tube unit, and coal consumption has been reduced more than 25%.

THE PERSONAL PAGE

JOHN H. RODGERS, formerly vice-president has been elected president of Hart Cotton Mills, Tarboro, N. C.

W. C. HILL, of Norfolk, Va., has been elected president of the Fountain Cotton Mills, Tarboro, N. C., filling the vacancy caused by the death of the B. MABRY HART.

GEORGE T. SECKEL, JR., of Utica, N. Y., has been elected vice-president of the Gardiner-Warring Co., Florence, Ala.

W. B. COLE, president and treasurer, Hannah Pickett Mills, Rockingham, N. C., has been confirmed by the courts as permanent receiver for the Mooresville (N. C.) Cotton Mills.

A. G. MYERS, president, Textiles, Inc., Gastonia, N. C.; A. E. DAVIS, secretary and treasurer, Rowan Cotton Mills Co., Salisbury, N. C.; E. W. SWIFT, president, Muscogee Mfg. Co., Columbus, Ga.; and HERVEY KENT, treasurer, Exeter (N. H.) Mfg. Co., have been elected to the board of directors of Cotton-Textile Institute.

W. M. SHERARD, of Hendersonville, N. C., who served as receiver of the Green River Mfg. Co., Tuxedo, N. C., prior to its recent sale at auction, has been elected general manager and agent of the Pisgah Mills, Inc., Brevard, N. C., succeeding W. C. Bobo, recently resigned. It is understood that Mr. Sherard will also operate the Green River plant for its new owners.

JOHN ALBERT PAWSON, chemist and former assistant manager of the Bradford Dyeing Association plant at Bradford, R. I., has been named manager and vice-president of the works. He has been with the company for 20 years and succeeds Dr. DONALD SINCLAIR ASHBROOK, who resigned several weeks ago.

JULES L. FOREMAN, vice-president and manager of Worcester (Mass.) Silk Mills Corp. has resigned.

EDGAR F. TABER, treasurer of Booth Mfg. Co., New Bedford, will retire from that position to devote his time to his duties as Treasurer of Parsons' Laundry in that same city.

EMERSON B. TIFFT, general superintendent of Harmony Mills, Cohoes, N. Y., which is being liquidated, will sever his connections with that company after 19 years association on July 15.

H. R. PINCKNEY, formerly superintendent, has succeeded JOHN WHITTAKER, resigned, as manager of Lincoln Bleachery & Dye Works, Lonsdale, R. I. ERNEST HAUKE is promoted to superintendency.

THAYER P. GATES, textile specialist, has become an executive of the Riverside & Dan River cotton mills, Danville, Va.

HOWARD R. MERRILL, who resigned his connection as sales manager of the worsted end of the Pacific Mills, is going into business on his own account in New York as a mill sales agent.

HENRY J. GOULET has entered business for himself in New York as the Textile Sales Service. He was associated with fabric styling for Pacific Mills for the last five years.

John A. McFalls, now superintendent of Mooresville Cotton Mills

JAMES E. SHIELDS, manager of Cheney Bros. greige goods department, has resigned to open a greige goods brokerage business in his own name in New York.

DRURY L. SHEARATON, recently with Walter Hurley, Boston wool dealer, now heads the grease wool division of Kincaid Kendall Co., recently appointed eastern agents for Pacific Cooperative Wool Growers, Inc.

S. JOSEPH OESTERLE has resigned as manager of the Jones Division, Arnold Print Works, Adams, Mass.

WALLACE J. ROSS, formerly of Minneapolis office of Munsingwear, Inc., has been named purchasing agent, with headquarters in New York, succeeding C. I. WILSON, whose resignation was announced effective Aug. 1. J. A. MUNSON has been named sales manager succeeding C. R. WHITE.

J. W. JENKINS, general superintendent, Hannah Pickett Mills, Rockingham, N. C., has been named general manager of the Mooresville (N. C.) Cotton Mills, and will divide his time between the mills in Rockingham and his new connection.

WILLIAM P. MCGRAIL, for many years associated with the McLoughlin Textile Corp., was recently elected sales manager and a director of the Gardiner-Warring Co., Florence, Ala.

JAMES R. LISTER, lately with Roubaix Mills, has been appointed general superintendent of Walther Mfg. Co., Philadelphia.

JOHN A. MCFALLS, formerly superintendent of the Ranlo Mfg. Co., Gastonia, N. C., has accepted a similar position with the Mooresville (N. C.) Cotton Mills.

B. W. BOWEN, who has been overseer of weaving at the Alice Mills, Easley, S. C., has been promoted to superintendent of the plant, succeeding G. L. AUSTIN, who died some time ago.

ANDRES STOLTZ, for several years with the Anniston (Ala.) plant of the Lengel-Fencil Co., manufacturers of hosiery, is superintendent of the newly formed Coosa Textile Co., in Anniston.

S. L. STACKS is now superintendent of the Jefferson Mills, Jefferson, Georgia.

LESLIE L. COBB, Anderson, S. C., formerly overseer of dyeing, bleaching and finishing of the Roanoke Mills Co., has joined the research staff of Tennessee-Eastman Co., Kingsport, Tenn.

NOEL D. WHITE, who has been pinch hitting for JOE H. CALLICOTT dyer at Walter Fred Hosiery Mills, Nashville, Tenn., will return to Signal Mountain, Tenn., as soon as Mr. Callicott recovers his health sufficiently to permit his return.

FRANK W. GURRY has resigned as superintendent of the Clinton (S. C.) Cotton Mills, effective Aug. 1, after filling that position for the last two years.

GERARD CHAPIN, assistant superintendent, Pacific Mills' print works at Lawrence, Mass., has been transferred to the company's new print works at Lyman, S. C.

J. O. WILLIAMS, who recently resigned as superintendent of the Spencer Corp., Spindale, N. C., has accepted a position as general superintendent of Pisgah Mills, Inc., Brevard, N. C., and the Green River Mills, Tuxedo, N. C.

Obituary

HARRY HAHN, one of Reading's pioneer hosiery manufacturers and founder of the former Stitchbound Hosiery Mills, died at the age of 72 years.

Z. R. LYTTON, superintendent of the Ragan Spinning Co., Gastonia, N. C., for the last eight years, died on June 3.

WILLIAM E. POOLE, aged 69, formerly general superintendent of the New York Insulated Wire Co. at Wallingford, Conn., plant, died June 23 at his home in Ashford, Conn. He was a pioneer wire insulator.

ERNEST J. GNAEGI, New York representative of the New England Spun Silk Corp., died June 24 in New York.

HERBERT CHESEBRO, 68 years old, president and general manager of the Hand Knit Hosiery Co., Sheboygan, Wis., died suddenly June 10, at his home. Mr. Chesebro was one of the founders of the National Knitted Outerwear Manufacturers Association, Western District, and for several years was district president.

OLIVER K. HAWES, for many years prominent as a cotton cloth broker died at Fall River, Mass., June 15, at the age of 63.

SAMUEL GIBSON ADAMS of Adams & Leland, Boston wool merchants and a former president of the Boston Wool Trade Association, died at Plymouth, Mass., July 2.

WALTER S. DILLING, vice-president and treasurer, Dilling Cotton Mills, King's Mountain, N. C., and resident manager of Cora plant of Textiles, Inc., of that city, died in a Charlotte hospital July 5 at age of 51.

The American Numismatic Society—

HISTORICAL COINS

(No. 6 of a Series)

THE Far East has always been the home of the bizarre. China issued coins in the image of knives, illustrated, dating from about 475 B.C. in the Tching Dynasty, saddles, forks, keys and silver ingots in the shape of shoes. These latter run up to the weight of 50 taels. Chinese Sycee Silver.

DURENE

natural bleached
colored and mercerized
yarns

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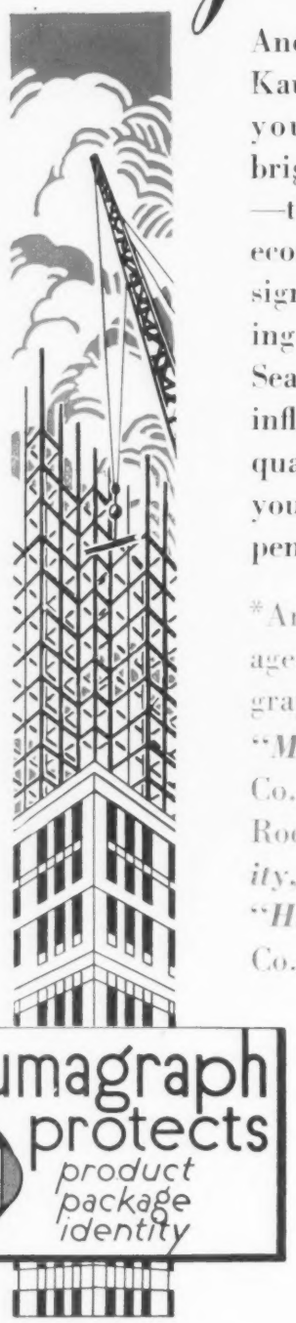
Kaumagraph protects your product Kaumagraph protects your identity

Building up or tearing down

THERE is no business act which does not either add to or detract from the standing of your organization and product. Every *sound* transaction is a stone in the wall of your future. every *unsound* one is a breach in that same wall—a breach that makes the whole structure vulnerable. An old Chinese maxim says that even the man who stands still is moving backward.

The unthinking rush toward cheapness has already caused serious breaches that affect our whole business structure. that affect adversely consumer confidence. that have tended to close the very pocketbook. which bargains were supposed to open.

Join now the constructive battle for quality! Restore the standards of value that built your business structure. before it is too late!



And remember, well-designed Kaumagraph Dry Transfers on your merchandise show up brightly in one or two colors —they reflect quality and are economical. Kaumagraph designed and lithographed packing.* Kaumagraph Embossed Seals—all can be a powerful influence in building up the quality reputation upon which your business future must depend.

*Among the many hosiery packages lithographed by Kaumagraph are: "*Marfield*," Marshall Field & Co.; "*Royal Purple*," Sears, Roebuck & Co.; "*Ward's Quality*," Montgomery, Ward & Co.; "*Hillcrest*," Golden Belt Mfg. Co.; "*Cannonette*," Knitting Dept., Wiscassett Mills; "*Archer*," Archer Hosiery Mills; "*American Beauty*," Hanes Hosiery Mills; "*American Beauty Rose*," Hanes Hosiery Mills.

KAUMAGRAPH COMPANY

200 VARICK STREET, NEW YORK CITY

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CHARLOTTE, N. C.
PHILADELPHIA
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LOS ANGELES
PARIS, FRANCE
CHATTANOOGA, TENN.
MANCHESTER, ENGLAND

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Packaging

AS APPLIED TO VARIOUS TEXTILE PRODUCTS

► *1 Identification of spools by denier and twist is simplified for customers by American Bemberg Corp.'s method of color-marking each spool. Company has issued card which identifies yarn in terms of colored plugs in spool base.* ► *2 Protection and display, important elements in modern packaging, are happily united in presentation of hosiery by Cannon Mills, wrapped in transparent material and attractively boxed.* ► *3 Bias tape makes handy, attractive package when wrapped in transparent material; Wm. E. Wright & Sons, Orange, N. J., found appearance helps sales.*

FOR golf we appear in knickers; for a formal evening perhaps in a tuxedo; for certain jobs around home or in the mill, in overalls. These are the "packages" in which we deliver ourselves for different purposes and occasions. Our dress affords protection and decoration—either or both, and these are just the purposes served by the various packaging of textiles.

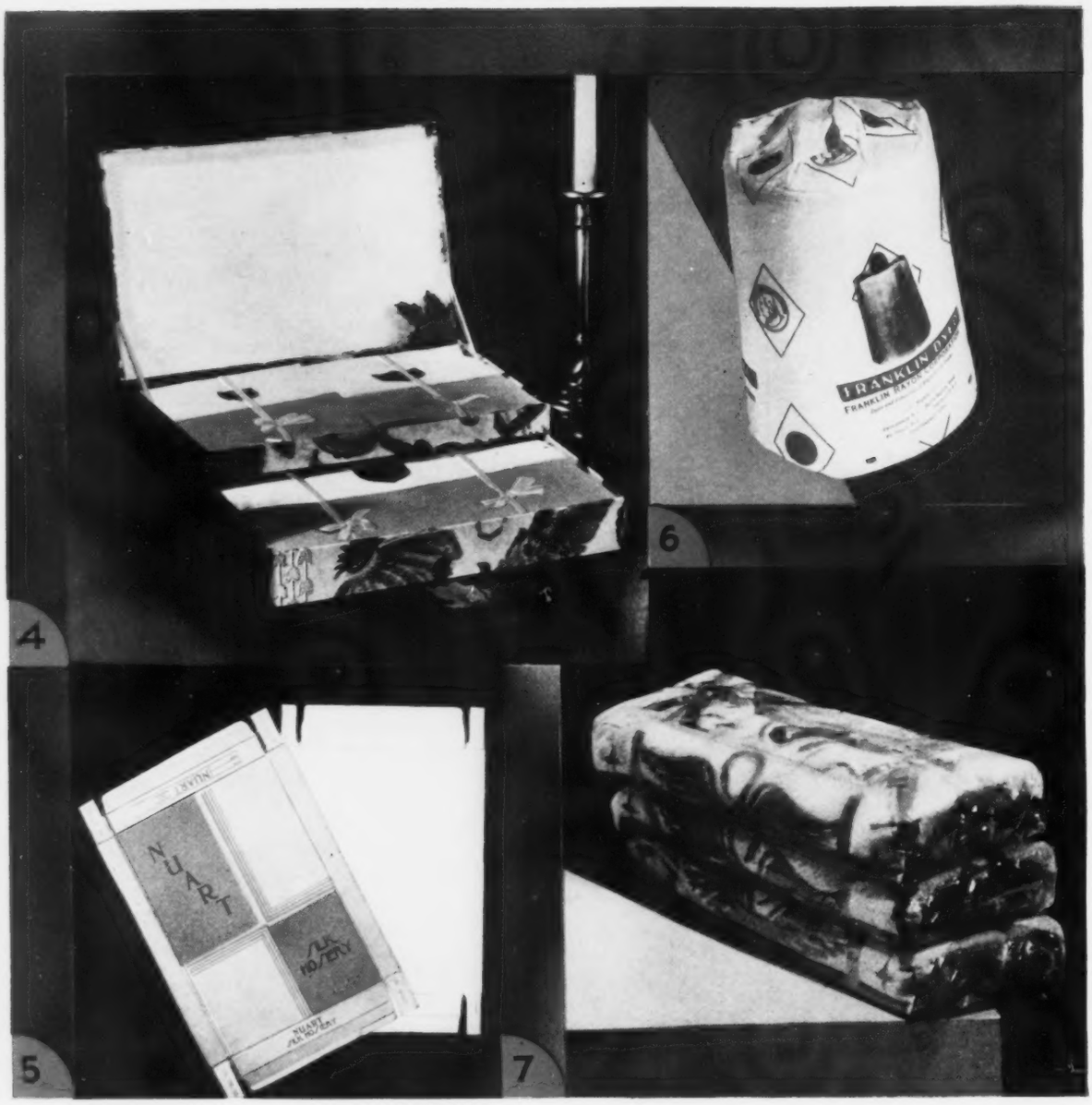
Primarily textile packaging is for a utilitarian end—to protect the goods on their journey to the place where they are to be put to use. When suitably decorated, however, the packaging attracts the user to the goods and acts as a silent salesman to carry ideas of style, quality, standardization, etc., to the prospective consumer on sight. Even utilitarian packaging, such as is used in inter-industry shipments of yarn and piece goods, is coming to have a character designed to distinguish and render more desirable the particular materials so put up.

Packaging of textiles may be divided into these two major groups: (1) for inter-industry shipments, that is from one manufacturer to another; and (2) for delivery into the hands of the ultimate consumer across the retail counter.

The first group comprises principally yarns and piece goods. In yarns, one of the most careful jobs is being done by rayon manufacturers, many wrapping their cones in waxed paper suitably branded on the outside, and one or two have been using Cellophane. Careful wrapping here not only guards the yarn against abrasion and soiling, but aids in retaining original moisture content.

Piece goods wrapping for inter-industry shipment is usually a simple affair. Except in the finer lines, there is usually no wrapping at all, the pieces being shipped in bales or paper lined cases. In the finer-materials field, such a firm as Stehli Silks Corp. has found it worth while to wrap every piece shipped in paper of a distinctive light green shade which serves not only to protect but to distinguish and identify Stehli goods in stock rooms of cutters or jobbers.

Finishers also have developed distinctive packing. Toledo Dye Works for example wraps piece goods in 60-lb. paper, usually dark blue, and fixes a 1½-inch diameter disk of the material itself at the end of the package for ready identification on the shelf. This company delivers sample headends in Cellophane envelopes and tissue paper is used between the folds of napped fabrics. Of course finishers generally will follow their customers' instructions on put-up, using customers' boards, bands, labels and tags, when requested. Simplicity, however,



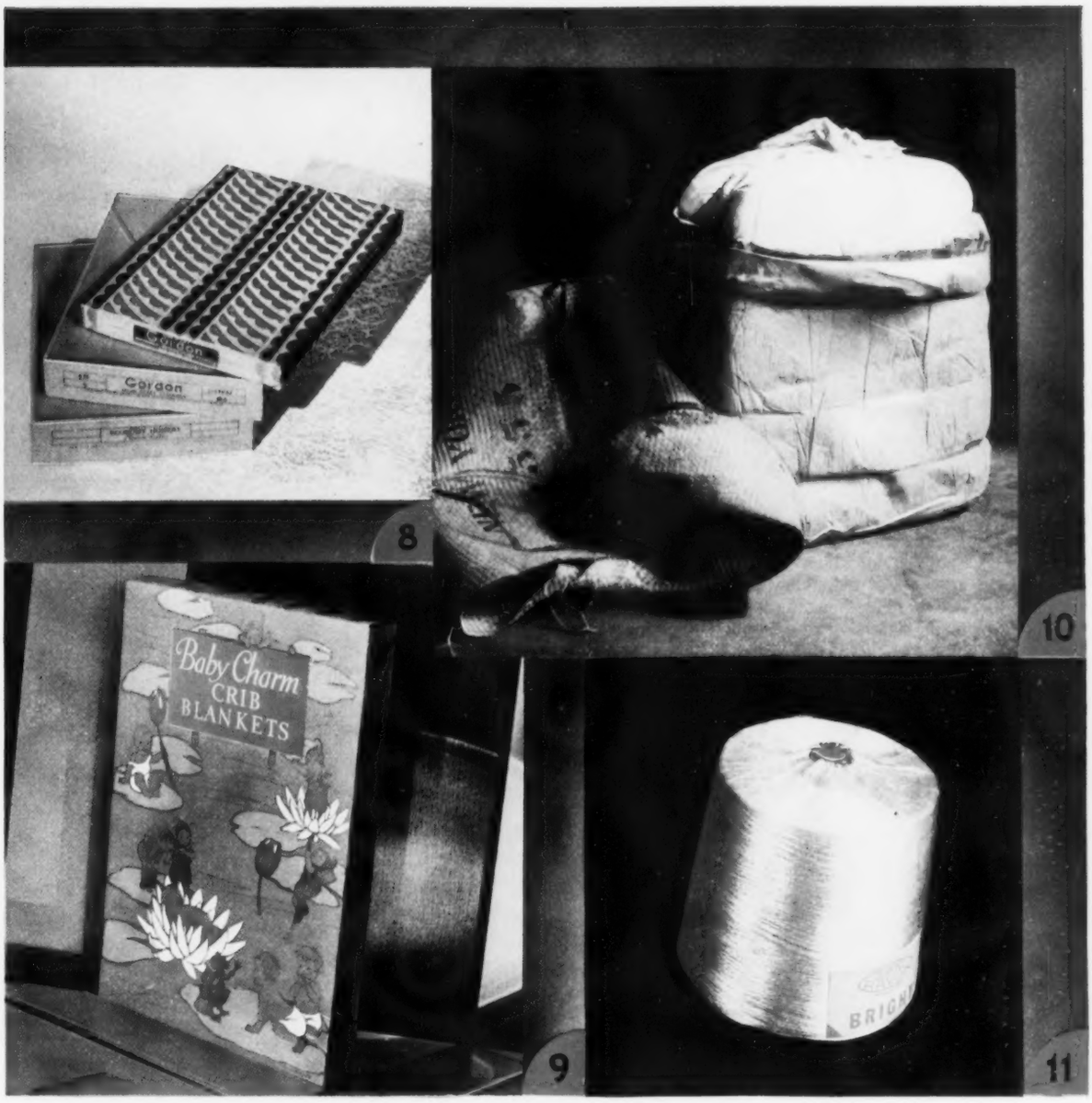
► *4 "Boudoir Box" used by Pequot Mills containing one sheet and two pillow cases. Pequot's "Show Box" is similar but the pillow cases are tied inside the cover.* ► *5 Space-saving silk hosiery box used by H. C. Aberle & Co. Box and cover may be stored flat and quickly set up when wanted.* ► *6 Wax paper wrapping used by Franklin Rayon Corp. for shipping rayon cones, has company identification printed as part of a distinctive design.* ► *7 Textile designs can be effectively displayed through Cellophane wrapper, as evident in Cannon Mills towel and bath mat sets.*

must be the rule for commercial work. A package which will unpack with maximum speed and facility gets preference.

There has been little progress in packing raw materials although efforts along practical lines have wrought a few changes. Cotton fabric baling for raw cotton has gained many adherents in the last 18 months of abnormally low cotton prices. Wool fabric pack for raw wool has not made such headway largely due to the added cost, though absence of broken vegetable fibers in the wool so packed is a strong selling point to some mills. Better packing of raw silk has been fostered by the United States Testing Co. and a new put-up, involving protective wrapping of waterproof paper and cloth under the usual matting covering has been developed.

So far we have been talking about the workclothes or business dress of textiles. Considerations in selecting such raiment are practical and relatively simple. It is the party frock that gives chance for subtle embellishments to set forth the human contents to best advantage and to display personal charm most effectively. The "party frock" of the textile product is the box or wrapping which takes it to meet the consumer.

Sale has usually been made to the commercial buyer before the goods are delivered to him. The goods rather than the packing make the sale. With the ultimate consumer, sale is usually not accomplished until the goods have been seen. Method of presentation to the consumer, therefore, is a most important element in closing the sale. In this field of consumer packaging there is full scope for the skill of the salesman, psychologist, artist and package manufacturer, and it is here that the most distinctive current achievements are to be found.



► *8 Modernistic design features boxes used by Brown Durrell Co. for Gordon hosiery. Sides of boxes are colored to match wood of retailer's show case, where hosiery is to sell from the box.* ► *9 Pleasing use of child motif as box decoration proved helpful to S. Blechman Co. in selling baby crib blankets.* ► *10 Water-resistant paper bag is now used by Japanese in make-up of raw silk bales, between the outer matting and the inner covering of cotton cloth.* ► *11 DuPont Rayon Co. utilizes product of affiliated company for Cellophane wrapped cone. Label is behind wrapping.*

Mills which turn out finished consumer products are naturally those which are outstanding in this class of packaging. These include the majority of hosiery, underwear, and knitted outerwear mills, along with makers of sheets, pillow cases, bedspreads, towels, etc. In a general way there has been a turn from the jazzy packages of a year or two ago to more conservative, quality-suggesting containers. Transparent wrapping materials have played a prominent part in current developments and are used effectively either alone or in conjunction with boxes. Elaborate containers for sheets and pillow cases have been on the market, reaching a climax in one company's box of polished aluminum with mirror cover. In the standard form of boxing these items, the arrangement permits the tieing of the pillow cases inside the cover so that when opened both pillow cases and sheets are at once on display. Such packing is used principally for colored sheets or otherwise highly styled items, the sale of which is aided against competition of lower-priced staples by the attractive setting in which they are offered. Cannon mills makes an attractive Cellophane packing of its towel and bath mat sets.

Hosiery boxes containing three pairs have become a popular item. Retailers prefer box selling as it means cleaner stocks, easier identification and simpler stock control. Low-priced hosiery which is a table item with many department stores, does not call for the de luxe treatment of higher priced goods. A line of folding boxes has been offered for hosiery which are easily set-up and present the appearance of a factory-set-up box. These appeal through economy of storage space for reserve supply. Harmonizing hosiery bands and box decoration as done by Kaumagraph Co. for Cannon Mills is an attractive ar-

► *12 Printed Cellophane wrapper effectively helps sales appeal, as in men's underwear package offered by Shorewood Mills.* ► *13 Three-piece set of pot-holder and wash-cloths ordinarily relegated to store basement, won place on main floor of leading New York store, due to pleasing appearance.* ► *14 Scene in package room of Toledo Dye Works, which firm makes a particular feature of wrapping its products.*

rangement. Underwear is now on the market in Cellophane envelopes on which successful printed effects have been produced. Such packing for shirts, drawers, etc., means fewer markdowns of shop-worn stock.

A report by R. G. Dun & Co. on the paper box industry shows a well-maintained business which indicates increasing use of shipping and merchandising packages. The industry has been operating recently on an average of 75% of its capacity. Failures have been very few, only 6 reported for 1931 out of a total of 1,250 establishments. Trade in paper boxes in 1931 declined 24% from 1930, a loss divided as follows by the National Paper Box Manufacturers: 12% to transparent wrapping materials, 8% to wood, 3% to glass and 1% to other forms. New business is described as encouraging based chiefly on the reason that attractive boxes have been found to be salesbuilders by the industries which use them.

The philosophy of style in packaging has been outlined by Irma Marohn, packaging stylist, of Robert Gair Co. as follows:

1. SHAPE—suitability of shape to contents; distinction; convenience of shape to use; convenience of size for use; not too high, not too wide. The shape may be tricky if it adds utilitarian advantages, but obvious trickiness only for the sake of being clever is not enough. Whatever the shape it must pack well, without waste, for shipping, and should be economical of paper board stock and production cost.

2. DESIGN—should describe the contents, if possible, and strive for pleasing simplicity by subordinating the design to the message to be conveyed. All the message that is really needed is the name of the product, if it is well-known, or if the name is not sufficient description, some phrase which describes the contents, plus the manufacturer's name.

Extreme modernism is not recommended for designs of nationally advertised and standardized packages since such designs would become outmoded too soon. A good package should include the element of timelessness.

A well-designed box will tell the same story or present the same central theme on the front and back panels and, if possible, on the two side panels as well. In devising a package family tie-up, the same design or a repetition of a central theme may be carried through logically, starting with the design of the individual package, the display container, probably a display stand and finally the corrugated or fiber shipping case.

3. TYPOGRAPHY—the lettering should be simple. The use of distinctive, but not freakish, identifying lettering which is in keeping with the design and character of the contents is a requisite. Interlocking letters, scrolls, and the use of too many type faces detract from legibility and simplicity.

4. COLOR—Full realization of the value of color has come only in comparatively recent years. This new freshness is an essential part of the appearance of modern successful packages. Color should be appropriate and indicate the contents of the package if possible. In the case of coffee, for example, brown and its variants are accepted as characteristic colors that our minds register at the thought of coffee.

The use of unusual and more subtle background colors will achieve attention in contrast with the orthodox reds, yellows and blues. In designing display containers wherein the individual carton is of great vividness, the use of a cool neutral color such as gray-beige or gray-green will be useful in providing contrast.

The first step in designing a new package is to survey the field of packages with which the new container will be called on to compete. The character of the colors which are vying with it for attention must be noted. The new package should predominate in its field.

"I am so pleased with the dyeing of the ULTRA Package and Beam Dyeing Machine that I am going to install more ULTRA Machines" . . .

WILLIAM MacNEILL, *president*
Caledonian Dye Works, Philadelphia

In addition Mr. MacNeill says . . .

"WE recently loaded the *ULTRA* Machine with 270 pounds of developed black, 60/3 ply, hard twist mercerized cotton yarn on parallel perforated standard paper tubes. This is possibly the most difficult yarn to dye *perfectly* that comes into our place. The *ULTRA* Machine, because of its thorough penetration, dyed this yarn to a fine even black throughout—it was perfect!

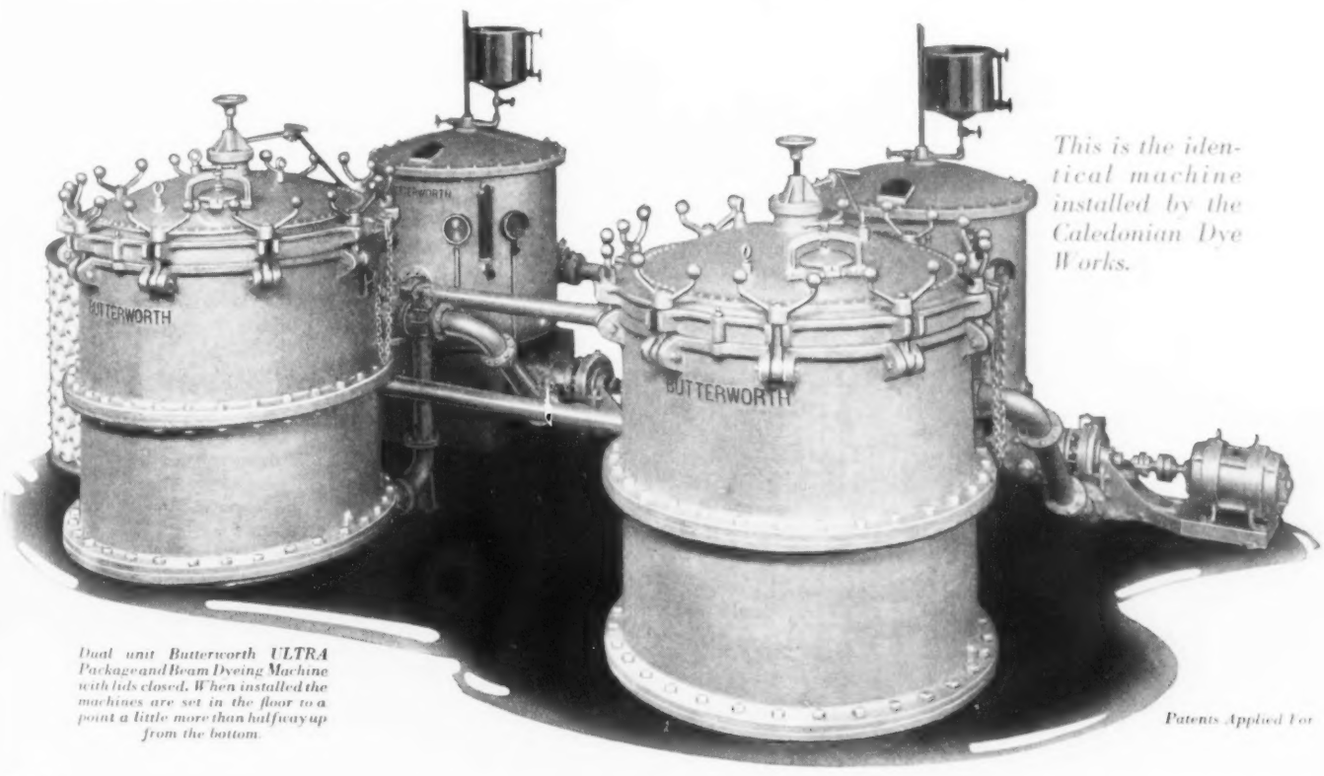
"The *ULTRA* Machine has met every claim made for it and I am so pleased with its operation that I am going to install more *ULTRA* Machines, for these will enable us to give our customers the finest dyeing possible."

We need add nothing to Mr. MacNeill's statement, except that *ULTRA* Package and Beam Dyeing Machines can be furnished in sizes adapted for the dyeing of 25, 50, 100, 200, 300, 500, 600, 800, and 1600 pounds of yarn on tubes. The 100, 500 and 800 pound machines can also be used for dyeing warp yarns on section beams in lots of 100 to 2000 pounds per dye batch. There is also a one pound package machine for laboratory work.

We shall be glad to make arrangements for anyone interested to see the *ULTRA* Machine in operation at the plant of the Caledonian Dye Works.

H. W. BUTTERWORTH & SONS COMPANY
Established 1820
PHILADELPHIA, PA.
PLANTS *at* PHILADELPHIA *and* BETHAYRES, PA.

New England Office:	*Southern Office:*	*In Canada:*
TURKS HEAD BLDG.	JOHNSTON BLDG.	W. J. WESTAWAY CO.
Providence, R. I.	*Charlotte, N. C.*	*Hamilton, Ontario*



This is the identical machine installed by the Caledonian Dye Works.

Dual unit Butterworth ULTRA Package and Beam Dyeing Machine with lids closed. When installed the machines are set in the floor to a point a little more than halfway up from the bottom.

Patents Applied For

BUTTERWORTH *Finishing* MACHINERY

A COMPLETE LINE OF RAYON AND FINISHING MACHINERY FOR THE TEXTILE INDUSTRY

STANDARD-COOSA-THATCHER

Durene

Mesh, Fancy Stitch, or Plain —

STANDARD-COOSA-THATCHER Durene will do a better job for you, —because uniformity of quality is a fundamental of Standard-Coosa-Thatcher Durene . . .

- Evenness of Thread
- Accuracy of Count
- in well-wound packages

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Canadian Representatives: Wm. B. Stewart & Sons, Ltd., Toronto-Montreal

LETTERS TO THE EDITOR

Comments on June Issue

Editor, TEXTILE WORLD:

If this issue is a good sample of the standard of your publication that you propose to set for succeeding issues, I think you have little cause for worry as to the success of it. Frankly, the set-up seems to be excellent, and the articles in this issue seem to me of an enlightening and stimulating character.

RICHARD W. SULLOWAY,
President, Sulloway Hosiery Mills.

Editor, TEXTILE WORLD:

My brother and I were very much pleased with the new monthly TEXTILE WORLD. I think the features and ads in several colors add quite a bit to the issue.

GEO. W. RAGAN, JR.,
Asst. Treas., Ragan Spinning Co.

Editor, TEXTILE WORLD:

It is unquestionably a very fine magazine in its present form and I think coming monthly presents a very much more formidable and comprehensive picture of the entire textile situation. LIONEL J. NOAH,
President, American Woolen Co.

Editor, TEXTILE WORLD:

I very much approve of the TEXTILE WORLD as a monthly, but think you will have a hard time maintaining the standard of this first issue.

C. H. FORSAITH,
Nashua Mfg. Co.

Editor, TEXTILE WORLD:

My criticism of the first new issue from the standpoint of a technical journal is that the get-up—or should one say format—is too ornate. Naturally that is only a personal opinion, but when I see sketches of mail bags, sheep, and what not scattered through the text, I do not feel that I am handling a technical journal.

R. CURTIS,
Quidnick Dye Works, Inc.

Editor, TEXTILE WORLD:

I have gone over very carefully your monthly issue of the TEXTILE WORLD for June, and think you have done a fine job in that you have some unusually interesting articles. I think the monthly issue is a good idea, as we all of us have so many things to read that I personally would rather concentrate on a monthly issue of the caliber of this one than to have one come every week, much as I enjoyed many of your weekly issues.

FESSENDEN S. BLANCHARD,
Pacific Mills.

Editor, TEXTILE WORLD:

The first monthly issue of TEXTILE WORLD has made a most favorable impression upon all of us here at the Institute. The new set-up of the magazine makes it very readable and the articles and editorials in the particular issue are timely and instructive. The manner in which each section is cross-indexed impresses us as being a distinct gain in convenience for the reader. GEORGE A. SLOAN,
President, The Cotton-Textile Institute.

Editor, TEXTILE WORLD:

We think you have done a splendid piece of work in your first issue, and are inclined to believe that you probably find it more satisfactory all the way around to edit the monthly magazine rather than the weekly.

C. S. TATUM,
Secretary-Manager, Pilot Mills Co.

Editor, TEXTILE WORLD:

Congratulations are due to the editor and staff on behalf of their splendid work in planning the June issue of the TEXTILE WORLD. We believe that good judgment was used in changing to a monthly periodical. Your subscribers should be boastfully proud of their industrial organ.

GEORGE J. BENSTOCK,
The Bloch Co. of Cleveland.

Editor, TEXTILE WORLD:

I have just finished examining the first of your new monthly issues and wish to offer my congratulations. If the succeeding numbers are as good as this one they will be very good indeed.

W. CARMICHAEL,
Georgia School of Technology.

Editor, TEXTILE WORLD:

First let me say that I think the TEXTILE WORLD has been greatly improved in the last couple of years as a weekly. Now that you have changed it to a monthly I am naturally disappointed as I prefer a weekly publication. As a monthly it appears to have very interesting articles and subjects therein, although I have only had a chance to read one or two of them. My frank opinion is that you have made a mistake in changing from a weekly to a monthly. W. S. NICHOLSON,
President, Union-Buffalo Mills Co.

Editor, TEXTILE WORLD:

I was very much interested in going through our plant copy when it was received. My impression was that you have made a great improvement in this journal and it would seem as if you could expect quite an increase in circulation. To tell you the "honest" truth, I do not see how you can improve it very much.

P. S. WILCOX,
General Manager, Tennessee Eastman Corp.

Editor, TEXTILE WORLD:

You certainly have turned out a swell book and it is so artistic that it makes one want to read it. I think your idea of the various Digests with the index on the opposite page is a fine idea because it enables the reader to easily find the articles he wants to read first. I congratulate you on your labor and predict great success. DEAN HILL,
Secretary, Throwsters Research Institute.

Editor, TEXTILE WORLD:

I think your first monthly issue is excellent in every way, convincing and additionally readable. I think the change is certainly advantageous. E. L. STARR,
Director, Durene Association of America.

Editor, TEXTILE WORLD:

I have taken the June issue of your publication home and have examined it from cover to cover. The impression which I get of your new form, both as to physical appearance and feel, as well as to contents, is very good. I confess that I have wondered in the past how a publication of your size could expect to get the reading it deserves when it reaches the desks of your subscribers with weekly frequency. I congratulate you on your publication, and wish it every success.

EARL CONSTANTINE,
Managing Director, National Association of Hosiery and Underwear Manufacturer.

[*Editor's Note:* Since we are able to print in this issue only part of the comments received on the first issue of the new monthly TEXTILE WORLD, we have selected the above items in the same proportion of favorable to unfavorable reactions, as featured the total number of replies. Of all the letters received, 91% were favorable and 9% unfavorable.]

TEXTILE WORLD is a consolidation of *Textile World Record* and *Textile Manufacturers Journal*, effected in 1915.

Textile World Record was the paper resulting from the merger, in 1903, of *Textile World* and *Textile Record*. The former was founded in 1888 by Walter B. Guild and Henry G. Lord. In 1895 it absorbed *Industrial Record*, formerly *Manufacturers Review and Industrial Record*, which was started in Boston in 1868. *Textile Record* was founded in 1880 in Philadelphia by Charles Heber Clark and Frank L. Nagle.

Textile Manufacturers Journal was founded in New York in 1894 by Joseph H. Bragdon. The merger of *Textile World Record* and *Textile Manufacturers Journal* in 1915 resulted in the formation of Bragdon, Lord & Nagle Co., Inc., and publication of *Textile World Journal*, later shortened to TEXTILE WORLD.

In 1923 *Posselt's Textile Journal* was absorbed by TEXTILE WORLD; and in 1924 *Textiles* was also absorbed.

In 1928, TEXTILE WORLD became affiliated with the McGraw-Hill Publishing Co.

The editorial staff of TEXTILE WORLD consists of: Douglas G. Woolf, editor; William B. Dall, managing editor; Edwin D. Fowle, associate editor; John Black, and Winn W. Chase, assistant editors; Ralph C. Maultsby, southern editor; James A. Austin, New England editor; Charles W. Fisher, Philadelphia editor; Elmer Loemker, art director.

[NOTE: The above historical summary is published semi-annually for purposes of record.]

THIS DEPARTMENT—

offers a new subject for discussion each month and gives readers' comments on problems introduced during previous issues. The subjects which were opened in May 14 and May 21 issues are closed and a summary of contributed ideas is given on opposite page. Overseers and others are invited to discuss the subject presented under the heading "Dealing With Slack Times" and other questions brought up in the super's talks. Letters accepted and published will be paid for without regard to length. Brevity is desirable.

▼

Overseers'

DEALING WITH SLACK

"UNFORTUNATELY," Superintendent Chase remarked as the meeting opened, "a great many mills are running short time these days and the problem of the size of the working force is more important than ever. I have been wondering whether it is best to let the overseers decide how many should be at work in a department, or whether the super should step in and say that with only so much production the number of second hands and workers on the pay-roll should be only so-and-so."

"I think that this is a problem that the overseer is well able to take care of himself," Bill spoke up, "and I, for one, would get pretty sore if the super tried to tell me how many I should keep on the job. The overseer, better than anyone else, knows what work there is to be done to turn out a certain production and he should be the one to have the say. I'll admit that it may be up to the management to say whether a department should run with full force part of the week, or with part of the force a full week, but once it has been decided that a department is going to run, say, 50% production five-and-a-half days a week the overseer is certainly the man to figure out how many he has to let go and how many he is going to keep. No super can know as much about a department as the overseer and any super who has the nerve to butt in on such a problem is plumb crazy in my estimation."

"What Bill seems to forget," Pete replied, "is that an overseer is very often so close to goings-on in his department that he can't

The Mill's Fire-Fighters

Editor, Overseers' Round-Table:

I THINK every mill should have a fire brigade, to be drilled each week by someone with knowledge of fire-fighting. Inspections should be made of the plant to prevent out-of-the-way places and bad electrical installations from becoming fire hazards. The men should be acquainted with the sprinkler system so that the water may be shut off when necessary as much damage is done by water, and the water pressure system also, so that fire pumps can be operated when pressure is low.

I have seen drills held both on company time and extra time and find that the extra time method works out to the best advantage. In case a man is working on something that would spoil if he left it, and his orders are to respond promptly when the call to drill comes, he will be at a loss what to do.

The best policy is to drill after working hours. Pay the members well, double-time if possible, because in case of an actual fire they are not going to turn you down if they have satisfied minds. You will find that, when a fire comes, such men will master the situation with a good deal less damage than the outside fire brigade as they have personal knowledge of the mill layout.

CAPTAIN, MILL FIRE DEPT.

Editor, Overseers' Round-Table:

A RAVAGING fire in the mill means unemployment and the huge army of workless needs no reinforcements, so the value of fire-fighting cannot be stressed too much.

In recruiting a fire company, great care should be taken to enlist only the right type of men. My experience has been that the young men will join up with enthusiasm, but after a short time their eagerness for drills and calls is lessened. However, a new company cannot be formed entirely of elderly or middle-aged men and I would suggest that young married men who have ceased to wander far away from home would make the best recruits. The membership should be 50% over the estimated necessary strength, for unlike a permanent company they cannot be expected to muster 100% at a fire.

With the exception of the occasions when all the employees are drilled for leaving by the emergency exits and escapes, the drills should be after working hours. If this is not done, the workers will be watching the unusual events and there will be but little production. Also, if the members of the fire company leave their work they will probably be holding back other employees. A. C. L.

Rolling Stones or Stickers

Editor, Overseers' Round-Table:

DURING THE past 36 years I have investigated the records of more than 20,000 mill overseers, superintendents and other executives and have watched the progress, success and reputation they have made, thereby obtaining a most intimate knowledge of their weak points, as well as their strong ones. Generally speaking, the overseer who has worked in a few mills is a better asset to the employer than either the overseer who has worked in one mill a great many years, or the "rolling stone" who has had 40 jobs in the last 10 years.

Here are two extremes:

The overseer who has worked in but one mill may have made an excellent overseer for that particular plant, but if he has to make a change and go to a new plant he may be a failure. He has been used to one mill, the layout of machinery in that plant and the class of goods the mill produced. None could question his staying qualities, dependability or reliability, but too often such an overseer is in such a rut, and at an age where it is so hard to adjust himself to new surroundings and new conditions, that he may be unable to handle a new job successfully.

Then there is the other extreme, the overseer who says, "I have worked most everywhere" when a prospective employer asks where he has been employed. Such a statement usually kills this man's chance to secure the position. This overseer may be tagged with this reputation, "he is a fairly good man but never stays in any one place very long." It is hard to convince an employer who asks, "what assurance have I that he will settle down and remain with me if I hire him?"

An overseer can change too often for his own good, but usually the one who

Round-Table

TIMES

get the right slant on things. Now, take the matter of reducing the working force when only 50% of production is to be turned out. The overseer may be able to cut down on his regular workers pretty well, but when it comes to the second hands and such very few overseers can figure out how any can be let go. This doesn't mean that there is anything wrong with the overseer, but merely that he is so used to having a certain man do a certain job that he can't see how he can get along without that man. I'm not in favor of having the super be arbitrary and say that so many have to be let go, but I do think that he should take a hand in things and advise the overseer. The super has an outside viewpoint and he can see better than the overseer where certain jobs can be doubled up. I think the wise overseer should welcome any advice the super can give about cutting down, particularly when it means so much to the mill. Naturally, we all want to keep as many employed as possible, but we can't lose sight of the fact that we have to cut to the bone these days or the mill will close and none of us will have jobs."

▶ Do *you* believe that the overseer or the superintendent should have the most to say about cutting down the force during slack times?

has made a few changes and has retained the knowledge he has acquired and experience he has gained by working in successful mills under able managers and superintendents with fellow overseers who have also been experts in their lines is the overseer who can be classed in the "Best Overseer" group.

CHARLES P. RAYMOND,
Pres. and Mgr.
Charles P. Raymond Service, Inc.

The Six-Hour Day

Editor, Overseers' Round-Table:

IF ALL the mills in our industry would adopt the six-hour day, production would be decreased and work given to a greater number of people. The plan would undoubtedly balance production and consumption of our products, thus enabling the mills to get a fair price and to maintain a good wage scale for their employees.

The textile industry has made great improvements in its machinery and methods and a great many labor-saving devices are installed in our mills. Instead of reducing working hours and keeping the people at work, the mills have cut lots of employees off and have continued to flood the market with goods, with each trying to sell cheaper than the other and nearly all losing money.

Which is better; to have shorter working hours at the same pay, more people at work and greater buying power, or to go on following the policy of over-production and price-cutting which is sure to cripple the whole industry? R. B.

Editor, Overseers' Round-Table:

I AM opposed to the six-hour day in the textile industry because it does not seem to me to be an economically sound idea from the viewpoint of either the management or the worker. Even with the present working schedule the expensively equipped plant is lying idle too much of the time and, if the hours of production are cut, the proportion of non-productive time will be much greater. A six-hour day for five days, with three hours on Saturday would utilize only 33 hours and for the remaining 135 the mill would be "eating its head off."

A six-hour day is not a good proposition for the worker. His rent, transportation, and other fixed charges will amount to the same as for a longer day, but his income will be reduced. He will have more leisure time, it is true, but it is doubtful if he can utilize it to any advantage. A DYER.

Editor, Overseers' Round-Table:

THE SIX-HOUR day is logically perfect, and a theoretically practical plan for the betterment of the human race. So is prohibition. Until such time as the American people become a law-abiding race the six-hour day is impractical.

Methods of accomplishing the benefits of the six-hour day are few. Socialism and voluntary effort would seem to be the principal means. Socialism is frowned upon by public sentiment, but is in actual effect so far as 10 or 11% of the population is concerned. This 10% comprises the so-called public servants. School teachers, office holders, members of the judiciary, and all the numerous list, would have difficulty in showing six hours of productive work per day. If we are willing to consider that the administration of government is humanly perfect, Socialism is the answer. If government is not perfect go back to a strictly individualistic system of competition.

Success stories to the contrary, no one ever got anything but a nervous breakdown or ruined health from excessive work. The directing of the labor of others, which has brought wealth and fame to many, is not work in the sense that a worker in a textile mill conceives it. It, therefore, means that a new state of mind must be engendered which will give credit to the man who is willing to quit before he has corraled all of the visible market.

J. CARLETON ESTY.

SUMMARIES

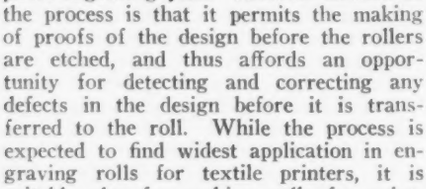
FIRE BRIGADE. *The vote was unanimous that every mill should have a trained fire-fighting force. The principal argument was that such a force would be invaluable in putting out small fires and in keeping larger ones under control until the arrival of the regular fire department. A slight majority favored holding drills outside of company time, with pay.*

SIX-HOUR DAY. *Slightly over 60% of contributors favored the six-hour day for industry, pointing out that the greatly increased capacity of machinery made some such step necessary to balance production with consumption and to keep the mass of workers employed. Another 10% were inclined to favor the plan, but saw many difficulties in practical application. The remainder believed that the six-hour day would either increase costs too much or lower wages below subsistence level.*

▼

Photo-Engraved Printing Rolls

COMMERCIAL production of photo-engraved printing rolls for textile use has been started recently by the Photo-Cylinder Co., 1911 Park Ave., New York. The engraving process employed by this company was developed by H. C. Boedicker and is said to offer a number of advantages over older methods. It is stated, for example, that the Boedicker process not only lessens the cost of engraving and the time required for the preparation of the rolls, but also enables reproduction of designs which hitherto have been impracticable for textile printing. Rolls are produced either for the ordinary printing methods or for three-color process. Various types of engravings and depths of etchings are possible with the new method, including a line similar to pantograph work and free from the halftone dots or photogravure lines encountered in the usual photo-engraving jobs. Another feature of the process is that it permits the making of proofs of the design before the rollers are etched, and thus affords an opportunity for detecting and correcting any defects in the design before it is transferred to the roll. While the process is expected to find widest application in engraving rolls for textile printers, it is suitable also for making rolls for printing wall paper, linoleum, and similar materials.



Stainless Steel Motor

A COMPLETELY sealed, stainless-steel motor has been developed by the Lincoln Electric Co., Cleveland, for use where dust, dirt, moisture or fumes would clog or corrode an open type motor. Unique cooling system is said to allow operation at full load within allowable temperature rise of 55° C. Two steel fans welded to motor keep air sealed in motor in continuous circulation and heat is carried to corrugated stainless steel enclosure which conducts heat to outer surface for radiation. Large welded steel multi-blade fan forces draft to drive radiated heat away. Removable cover makes cleaning of stainless steel radiating surface easy.

Gear Motors

LINE of gear motors, consisting of normal speed motor in combination with built-in, internal-helical planetary-gear speed-reducer, has been announced by General Electric Co. Manufacturer lists the following features: compact construction; full hp. rating of motor at output shaft; economy of installation and operation because of self-contained unit; simple design. Available in either flanged or vertical mountings, with shaft speeds as low as 13 r.p.m.

Gear motors may be had with special electrical characteristics, such as high starting torque with low starting current, adjustable, varying, multispeed, etc.; also various mechanical features such as totally enclosed, etc.

Pneumatic Switch

DESIGNED for use with their standard temperature and pressure controllers, the Foxboro Co., Foxboro, Mass., has announced a compact pneumatic switch which makes possible the use of air-operated controllers on equipment that is controlled by turning on and off an electric current. Switch is operated by a small diaphragm motor mounted directly on housing, being closed by air pressure from the control instrument and opened by a spring. Switch is always open when air is off. Has been used to control motor operated pumps, blowers and compressors, electrically heated oven and as a means of producing audible or visible signals on time cycle applications.

Vapor Pressure and Temperature Control Cabinets

A CABINET to provide facilities for control and maintenance of vapor pressures, humidity and temperatures in testing has been devised by the Freas Thermo-Electric Co., Irvington, N. J. Cabinet is self-contained unit, equipped with regulators, heaters and other devices to effect control of both wet and dry bulb temperatures and vapor pressure conditions. Dehumidification and cooling apparatus can be furnished as part of equipment.

Electrical-resistance units are used for the heat source and acted upon by thermo-regulator to effect control of dry bulb temperature. Humidification, to control wet bulb temperature, is accomplished by means of an injector atomizing a water spray or by introduction of steam, the nozzle being controlled by a wet bulb thermo-regulator actuating electrically operated valves. A system of propelled air circulation or heat transfer by mechanical convection is employed. Air is preheated and conditioned before entering chamber.

Graphic Instruments

NEW line of graphic recording instruments announced by Esterline-Angus Co., Indianapolis. New and improved features include: spring clocks made of removable units; all three springs in clock wound at one time by simple crank; rolls driving charts can be coupled back of gears which fix chart speeds; insulated measuring elements; inkwell designed to reduce evaporation; inkwells and pens removable without tools; magnetic damping and interchangeability of all measuring elements in different cases.

One development is instrument for recording quantities which are changing rapidly.

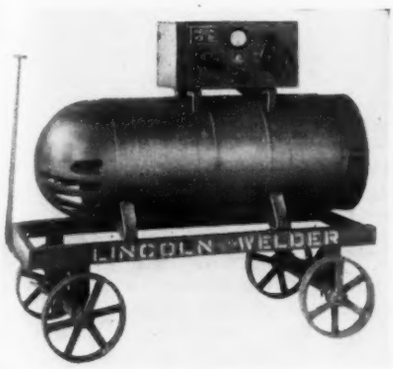
Lift Truck

NEW "Gold Flash" single lift truck has been developed by Lewis-Shepard Co., Boston. Features include: head room reduced to minimum; newly designed high capacity release check governs load in lowering; larger oil reservoir gives 200% overcapacity after allowing for all possible leakage; lowers load forward and downward at same time; handle always connected with load when in load-raising position; operator has only to press on release pedal to lower from elevated positions. Made in capacities up to 5,000 lb.

Centrifugal Pump

A BALL bearing centrifugal pump, developed for the handling of chemicals, has been announced by the Hills-McCanna Co., Chicago. Features include: all parts coming in contact with liquid can be made of any machineable ferrous or non-ferrous metal; removable inboard or outboard head, making replacement simple where highly corrosive liquids are handled; easily taken apart for cleaning; stuffing box of split screw gland type; shaft and impeller alignment accomplished by use of ball bearings. Greater capacity per hp. and reduced maintenance cost are claimed.

AND PROCESSES

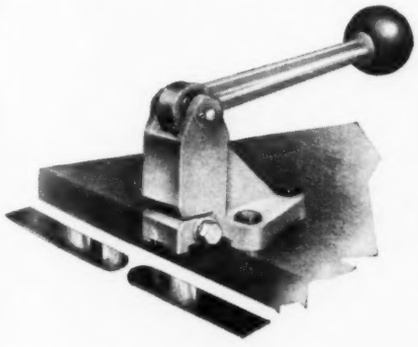


"Shield Arc" Welder

NEW "Shield Arc" welder is announced by the Lincoln Electric Co., Cleveland. Uniform welding current is one of features claimed by manufacturer; the uniformity permitting higher average current per given sized rod. Necessity for stabilizer or kick transformer has been eliminated by design. Equipped with dual control and reversible voltage control. Welder is entirely enclosed and constructed of welded steel, the running gear being removable. Built with a.c. or d.c. motor drives in 300, 400 and 600 amp. sizes. More weld deposit per kw.-hr., faster welding per kw.-hr. and lower cost per unit claimed by manufacturer.

Stenciling Outfit

FOR stenciling corrugated fiber boxes, fabric bags, etc., the Everhot Mfg. Co., Maywood, Ill., has developed a new type self-inking roller brander which may be furnished with or without ink-drying attachment. Brand is rolled along, producing a continuous stencil from a few inches to hundreds of feet long as desired. Ink drying attachment may be used where container is damp; amount of heat can be regulated. Said to be particularly suitable for placing designs and trademarks on containers.

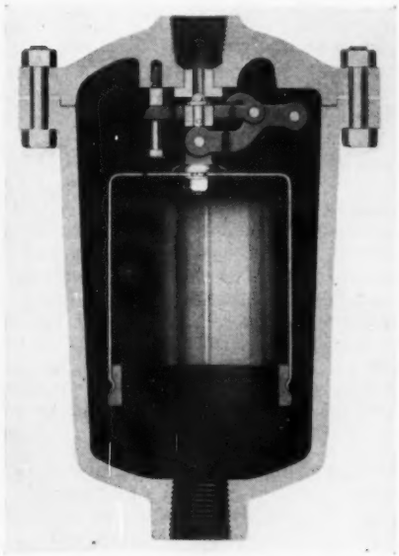


Strap Cutting Tool

THE Acme Steel Co., Chicago, has developed a new strap cutting tool designed especially for the textile industry. Cutter makes two smooth, rounded ends on bale ties at one operation. Long handle which gives leverage minimizes effort. Punches and dies are made of tool steel and are reversible. Tool may be mounted on post by the bale press, on bale press frame, or on bench. Handle is reversible so that operation may be done by either pulling or pushing.

Unified Slit Ultramicroscope

BAUSCH & Lomb Optical Co., Rochester, N. Y., has developed a unified slit ultramicroscope to simplify study of colloids. Instrument consists essentially of illuminator, illuminating microscope, adjustable platform and three-way mechanical stage. Any compound microscope with a square stage may be used. Permanent alignment and simple adjustments are claimed and instrument may be used for study of any of the eight possible colloidal systems.



Inverted Bucket Trap

NEW inverted bucket trap has been announced by the Swartwout Co., Cleveland. In operation, when the bucket sinks it pulls the disc lever down and the other end of the disc lever pries against a guide post to multiply the leverage for cracking the valve disc from its seat. As the disc is cracked a "kicker" on the bucket lever strikes the valve lever and forces the disc and disc lever clear of the discharge opening. When the bucket rises the bucket lever strikes the disc lever and snaps the valve to its seat.

Multi-Speed Transmission

A LINE of "Multi-Speed" change boxes, using the Gibbs' V-Disc transmission, is announced by General Radial Drill Co., Cincinnati. There are eight speed changes up to ratios of 9 to 1, the changes being made by means of a star knob located at top of unit. The idler disc sets up a wedging action in proportion to the load transmitted, thus eliminating slippage. Grooved cones are of steel and mounted on steel shafts supported by ball bearings. The composition disc runs as an idler between cones and is only part to wear, outside of bearings. Advantages claimed are high efficiency, long life and low up-keep cost.

Heavy Duty Flooring

A NEW type of steel floor armoring has been developed by Acme Steel Co., Chicago. Product is manufactured of cold rolled strips of steel, suitably joined together, and is furnished in rolls of approximately 100 sq.ft. Sections are unrolled on floor base and joined to form continuous mat, after which filling material of concrete, asphalt, etc., is poured over it and floor leveled off flush, leaving top edges of steel exposed in the surface to take the wear. Can be used in new construction or over old wood floors. Acme Floor-Steel is said to be non-skid and highly durable.

General Equipment

ALSO of interest to the textile field are the following improvements in general industrial equipment:

Magnetic Switches. General Electric Co. Line of full voltage starters for squirrel cage induction motors now complete for sizes up to 1,200 hp. Switches include new thermal overload relays claimed to follow heating characteristics of motor more closely than previous types.

Hand-Operated A.C. Starting Switch. Allen Bradley Co., Milwaukee, Wis. New, compact, manually operated switch to start and stop small a.c. motors and give overload protection. Has two overload relays and tripping of either opens contactor and disconnects motor from line. After tripping either relay can be reset without opening cabinet.

Welding Equipment. Linde Air Products Co. New blowpipe with oxygen and acetylene valves located on front of handle for easier adjustment of flame. Also "Oxweld Extensometer" a new device to determine yield point of specimens being tested in Oxweld Portable Tensile Testing Machine.

Single Line Multifeed Grease System. Hills-McCanna Co., Chicago. System for application of light greases and heavy oils to points requiring regular lubrication. Motor driven grease pump forces grease along single line from container, with branch lines taken to bearings. Independent mechanical measuring unit placed at each bearing which allows only proper amount of grease to pass. Facilities provided for warming grease in cold weather.

Valve. American Car & Foundry Co., New York. Improved Milliken valve having only seven parts. Solid head construction avoids use of glands, bonnets, stuffing boxes, packing or gaskets.

New "Oxweld" Regulators. Linde Air Products Co., New York. Two new regulators, Type R-48 Oxygen Regulator and R-49 Acetylene Regulator, have been added to the line of Oxweld welding and cutting equipment.

Re-odorizing. E. F. Houghton & Co., Philadelphia, are selling to rayon hosiery mills a new perfume "DelOdor" for perfuming their product.

QUESTIONS AND ANSWERS

Cloth Calculations for Draperies

Technical Editor:

I should like information on cloth calculations for rayon and cotton mixed draperies and tapestries, and also rayon crepes, with the object of determining the following: (1) number of ends required in warp when sley and width are given; (2) dents per inch for any sley; (3) sley cloth a reed will weave when length and total dents in reed are known; and (4) width of warp ends in reed.

The draperies are 100 and 150 sley, using 150-denier rayon warp and cotton filling. The tapestries are 135 sley, using two beams of cotton and one beam of rayon (single and two-ply) with three shuttles of cotton filling. The crepe is all rayon using 100- and 150-denier warps with 100-, 125-, and 150-denier filling, 94, 96, and 124 sley. I should also like rules for rayon warp contraction, if any. (7896)

(1) Multiply sley by width of cloth for total ends less extras for selvages. For ordinary selvages it is customary to add 24 to 32 ends extra, one half of these to be used for each selvage in order to strengthen that part of the yarn in the reed where the greatest strain comes during weaving. Marquisettes, voiles, and sateens are usually woven with a special selvage. There is no hard and fast rule governing the width of the selvages; but as they play an important part in the weaving and in the finished cloth, it is well to consider the type required for the cloth in question.

(2 and 3) Reeds are usually based on two ends per dent. For ordinary cloths they are figured on a basis of 6½% contraction from reed width to woven cloth. Thus, if a sley of 100 is called for in the woven cloth, 100x93½ will give ends per inch as they lie in the reed, and this is termed the reed sley. Sometimes the ends are drawn in the reed one, two, three, and even as high as five ends per dent. In this case proceed as follows: Multiply sley of woven cloth by width of woven cloth, and divide answer by ends to be drawn in each dent of reed. Answer will be dents per inch in reed.

There is really no hard and fast rule governing this matter, for much depends on picks per inch on cloth and type of filling used. If filling is very heavy or is hard twisted, warp will have to do most of the bending or contracting; and this will mean that contraction from reed width to woven width will be much less than 6½%. It means that filling is not doing much bending; and a reed will have to be calculated that will approximate the difference between warp and filling contraction.

Correct reeding of warp is very essential to good weaving. No two looms operating on same construction and yarns will weave exactly the same width of cloth. Most buyers will allow a tolerance of ¼ in. either narrow or wide.

(4) Multiply sley by width of cloth and divide answer by ends per dent to be drawn in reed. Answer will be total dents to be used. Then divide total

dents by dents per inch in reed (see No. 3). Answer will be width of yarn in reed. From this last answer, length and weight of filling are figured.

There are no set rules for rayon-yarn contraction during weaving. Many factors have to be considered when weaving rayon, cotton, or silk. A warp woven with a low tension will deliver the yarn much faster than will a warp that is woven with a high tension. There is no weaving let-off yet invented that will deliver yarn in exactly the same condition from every beam, even if all the warps contain the same size and type of yarn, same number of dents, and same number of picks per inch.

▼

Creases in Weighted Silk Crepe

Technical Editor:

I am inclosing herewith a sample of French crepe, in which there are quite a few dry creases. I have tried everything but cannot overcome this defect. We give our French crepe three passes of tin and dye in silicate. After finishing, the creases show up more. The percentage of weighting after finishing is 55 to 60%. Will you kindly give me your opinion as to the cause of this defect. (7906)

It is our opinion that the creases are due to improper methods of applying the silicate, or possibly to the use of too large an amount of silicate. We suggest that you increase the amount of tin and cut down on the silicate. It is possible also that better results will be obtained by making the silicate treatment a separate operation, dyeing the fabric in a fresh bath. You should make certain also that there are no creases in the gray fabric, and that the goods are not tied too firmly when sent to the dyer.

▼

Mercerized Stockings Vary in Shade

Technical Editor:

We are enclosing two mercerized stockings which are supposed to be exactly the same as regards construction, yarns, etc. You will note considerable variation in shade, which appears to us to have been caused in dyeing. However, our dyer contends that there is a difference in the yarns. Will you kindly give us your opinion? (7865)

It is our opinion that the variations in shade are the result of uneven mercerization of the yarns used in the hosiery. One of the stockings is of distinctly darker shade than the other. We attribute the lack of uniformity to uneven mercerization for the following reasons: (1) The unmercerized yarns used inside the welt have been dyed the same shade in both stockings. This indicates that the dyeing was not at fault. (2) The mercerized splicing yarns used in the sole and the high-spliced heels, which are of a good quality, are dyed the same shade in both stockings. (3) The mercerized yarns used in the leg, foot, heel, and toe areas show short horizontal streaks which are characteristic of a yarn not uniformly mercerized.

To prove definitely that uneven mercerization is the cause of the defect, we suggest that you strip and redye samples showing this irregularity. Yarns which have been uniformly mercerized should show uniform colors upon redyeing. On the other hand, if there is a difference in the degree of mercerization, it will show up in successive dyeings. In this way, the dyer can determine and prove to others that the fault is in the yarn.

If bleached yarns were used, it is possible that uneven bleaching was the cause of the difficulty. It is, of course, generally known that bleached yarns dye differently from unbleached yarns. The bleached yarn will take up more of the dyestuff and show a darker shade. Overbleaching may result in the formation of oxycellulose which has a different affinity for dyestuffs than has either cotton or mercerized cotton.

▼

Hot-Air Slashing of Cotton

Technical Editor:

We have a Saco-Lowell hot-air slasher running on 2/30s worsted at the rate of 37 yd. per min. Please advise what production we can expect when running on single 45s cotton. (7901)

Production of slashers is affected by many variables. The number of the yarn, the ends in the warp, the temperature of the drying medium, and the percentage and type of size all have a direct bearing on the amount of yarn which can be satisfactorily processed. Assuming certain fundamental conditions in reference to the hot-air slasher, we have prepared a brief table which we feel will serve as a guide.

With a four-section hot-air slasher having eight coils of pipe, efficient circulation, and 65 to 70 lb. steam pressure, the following productions may be approximated on yarn containing not over 12% of size.

No. ends in warp..	2000	2500	3000	3300
Yards per min.....	36	35	33	31
Lb. per hour.....	120	140	160	176

Special care will have to be taken to see that all guide rolls are straight, that the bearings and gudgeons are not worn, and that no condition exists which will build up the strain on the yarn. It will be necessary to give special attention to securing accurate alignment of the carrier rolls, so that the yarn will not roll and creep during its passage through the cylinder.

The hot-air slasher is designed to process woolen, worsted, and heavy cotton warps, such as carpet warps; and

QUESTIONS AND ANSWERS

the results attained with fine yarns have never approached those attained with the cylinder slasher. However, the productions which we have outlined are conservative; and it is our opinion that you will have no difficulty in reaching this poundage if all internal conditions are satisfactory and the equipment is in good shape mechanically.

▼

Yarn Tendered by Acid

Technical Editor:

We are enclosing herewith a few yards of a ½-cut white-core yarn, together with an athletic socket knitted from it. You will note that the sock is tender. This is one of about 200 doz. socks which were knit from this lot of yarn. Approximately 30 doz. were sent to one customer, who has found them to be tender. The others have never been heard from, but they were shipped to various customers.

Our customer maintains that the tenderness lies in the yarn, whereas we believe that the trouble is due to his finishing process, as he uses a small amount of sulphuric in the finishing bath to whiten the material. We contend that the washroom man applied an over-dose of acid to the 30 doz., thereby carbonizing the cotton core and making the yarn tender. (7868)

It is our opinion that the tender condition of the finished sock is due to carbonizing of the cotton core of the yarn. The carbonizing probably occurred in the manner which you indicate. The original yarn seems strong enough; and with proper scouring and bleaching methods, no difficulty should be encountered. Use of sulphuric acid is unusual in the washing of socks or yarn. If any acid is left in the washed product, it will tender the cotton core on drying.

▼

Water-Drop Test for Silk

Technical Editor:

Will you kindly explain how I can make a water-drop test to determine the hygroscopic value of thrown silk? I am interested in a test which can be made in the mill without sending the silk to a laboratory. (7887)

When silk fiber is wet, it stretches considerably in length. This property is important in knitting hosiery on a full-fashioned machine, since properly-moistened silk gives well-formed loops which, in turn, make perfect stitches—the basis of a hose free from sleaziness.

It has been a common practice, until recently, to run hosiery tram, received on paper cones from a throwster, through a wetting-out emulsion to add sufficient moisture to the silk yarn to make perfectly knit hose. As an economy measure there has been developed by several throwsters a yarn which can be knitted directly from paper cones, thus eliminating the backwinding expense, which in considerable. Because of its ability to take up water readily, the yarn has been called hygroscopic.

In order to measure roughly the hygroscopic value of such silk, water may be dropped from an ordinary medicine dropper onto the cone of silk, and the time required for complete absorption of one drop noted by means of a watch.

▼

Shorts and Grease in Mohair Yarn

Technical Editor:

We are enclosing a sample of mohair with which we are having a lot of trouble. If you can send us any information which will be helpful, it certainly will be appreciated. We are spinning this to 20s; draft, 9; twist, 9.5; ratch, 8.5; spindle speed, 5,000 r.p.m.

We are getting a good spin, but are enclosing some of the shorts or dirt and grease which adhere to both top and bottom rolls, making it necessary to stop frame and clean both rolls every doff. Even then, some of it is getting into the yarn. It accumulates on rolls and then runs into the yarn. We understand that lard oil is being used on this. It is our idea that there is too much short fiber in the stock, also that it isn't washed clean enough. (7880)

After examining the sample of roving submitted we cannot agree with you regarding an excess of short fiber or imperfect scouring. The roving is too rough or beardy, which may be due to one or more of following causes: (1) top is not aged long enough; (2) oil content is too low, or the oil is not satisfactory; (3) atmospheric conditions with regard to humidity or temperature, or both, may not be right.

Slow speeds are essential for the successful drawing and spinning of mohair. Mohair is loose and wild in tendency. High speeds increase the amount of short fiber thrown out, which collects on rollers, carriers, rubbers, and fly boards. Some spinners prefer olive oil, but there are others who are obtaining satisfactory results with a good grade of lard oil. If the oil content of the mohair top you are using is about 3½%, we recommend the addition of 1% to 1½% lubricant in the drawing. If possible, run the rovers at a slower speed.

Your spinning ratch is set to staple. Try a frame with a 9½-in. ratch, set carriers (a) wide (b) fairly close to front rolls; and select *a* or *b* according to the flyings evident on flyboard each doff. If twist does not run into nip, change angle or rolls, if possible, or raise flyboards. If your frames are not equipped with bottom-front-roll rubbers, try some of the old-style waste balls which are made just the right size to fit between the roller beam and the bottom-front-roll boss. The spinner will have a busy time removing the balls, stripping the waste from them, and reinserting them; but some spinners look upon them as indispensable.

We cannot criticize the top because no sample was submitted. We do believe that if better attention is given to the cleaning of all the rubbers throughout the drawing, less short fiber will be carried along to the spinning, and the roving will be more free from waste, neps, and slubs.

When there is trouble with dirt and waste fouling the rolls, it is often due to (1) an excess oil content, (2) oil in top has become "tacky" or gummy due to age, or (3) machines were too cold and moisture content was low. When, in addition to one or more of these evils, an abundance of short fiber is present, the trouble is increased.

Suggestions for drawing: (1) more open ratches on heavy end with about 9-in. ratch at rover, (2) strict attention to cleaning of rubbers, (3) slower speeds at rover, (4) a twist in roving as soft as possible if the roving is aged before spinning, and (5) try suggestion of 1% lubricant if the oil content of top permits. Suggestions for spinning: (1) increase ratch to 9½ in., (2) experiment with carrier settings, (3) try some device to act as a rubber, (4) change settings to get twist into roll nip, (5) maintain proper atmospheric conditions.

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Silk Soaking Problems

Technical Editor:

In our opinion the answer to your question on silk soaking in your April 16 issue is incomplete in that it recommends only oil for this operation. We refer to the following question:

"I understand the approximate time for silk soaking in practice today for both full fashioned and seamless hosiery to be about 10 hours. I wish to inquire if the same silk soaking formula can be used for both seamless and full fashioned work. Also, will there be any difference in the formula and length of soaking time for silk warp as compared to a process used for the knitting trade? Would one general soaking formula be satisfactory for the seamless knitters for various machines and for different threads?"

It has been our experience that soap is more widely used for silk soaking than self-emulsifying oils. The use of a soap and oil formula has several advantages. We have found it a far more efficient and economical way to soak. For example—in the instance considered, a good formula for yarn for seamless knitting is 5 lb. of soap and 10 or 11 lb. of oil, instead of the 20 to 21 lb. of soluble oil necessary for a 26 to 27% boil-off.

Correspondingly, on yarn for full-fashioned work, a 23 to 24% boil-off can be obtained with 7 lb. of soap and 6 or 7 lb. of oil, instead of 16 to 18 lb. of soluble oil. A good warp-soaking emulsion can be made from 3 lb. of soap and 6 lb. of oil.

THE PROCTER & GAMBLE CO.
W. W. Bray, Textile Research Dept.,
Chemical Division.

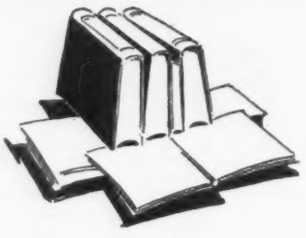
NEW PUBLICATIONS

THE NEW DRAW-LOOM; by Luther Hooper; Isaac Pitman & Sons, New York; 200 pp. 9⅝x7¼. 43 illustrations, some in color; $6.00.

Mr. Hooper has made a lifetime study of the art and craft of hand weaving and has written a number of books on the subject. In this volume he carefully describes a loom of his own invention designed to facilitate the production of jacquard work by the hand weaver. After the operator has tied up his design on a set of cords aranged in front of him as he sits in the loom, he can, without manual or mechanical assistance, draw such cords as may be necessary to form the design, shed by shed, line by line, and repeat by repeat, in due succession without moving from his position.

DYNAMARHYTHMIC DESIGN; Edward C. Edwards; The Century Co., 353 Fourth Ave., New York; $3.50.

This book applies to the creation of new patterns, the principles of dynamic symmetry rediscovered by the late Jay Hambridge. Mr. Edwards explains with clarity how to build up, synthetically, a new scheme of design, based on the geometrical principles of proportional growth and arrangement. It is designed to assist the student to break away from the tendency to follow more or less slavishly the arts of the past and will afford him a new means of creating fresh ideas. It is



well illustrated with original drawings by the author and should be of special interest to textile designers.

Business Literature

Leather Belt Drives. Alexander Bros., Philadelphia. Non-technical power transmission guide, describing application and design of modern leather belt drives.

Chemicals. J. T. Baker Chemical Co., Phillipsburg, N. J. "Baker's Analyzed" catalogue includes chemicals meeting all specifications of Analytical Regents Committee of American Chemical Society.

Corrosion Problems. International Nickel Co., Inc., New York. Describes use of Monel Metal in solving corrosion and other problems in textile dyeing, stripping and bleaching.

Water Purification. The Permutit Co., New York. Recent developments in Zeolite water softening, use of chemicals as coagulation aid, and modern filter plants for removal of color or turbidity. Water treatment benefits explained.

Lubrication. The New Departure Mfg. Co., Bristol, Conn. Minute analysis of principles governing lubrication of anti-friction ball bearings, including use of oils, greases, oiling and greasing methods, splash feed, oil feed and wick feed.

Strainers. Fisher Governor Co., Marshalltown, Ia. Describes eight outstanding features of new Fisher "Fre-Flow" strainers for steam, air, water, oil and gas.

Exhaust Fans. The Duriron Co., Inc., Dayton, O. Engineering and mechanical characteristics of Duriron fans and their installation described, with 19 dimensional drawings.

Electric Locomotives. The Atlas Car & Mfg. Co., Cleveland, O. Storage battery, combination and trolley locomotives discussed according to following service applications: mining, tunnel service, load carrying, industrial and switching. Specialized production emphasized.

Industrial Chemicals. Merrimac Chemical Co., Inc., Boston, Mass. Properties, uses, and methods of shipment.

Leather Belting, Round. J. E. Rhoads & Sons, 35 North Sixth Street, Philadelphia, Pa. Advantages of new tannate special rounded belts.

Materials Control. Metropolitan Life Insurance Co., 1 Madison Ave., New York City. Prepared by the Policyholders Service Bureau.

Motors, Direct Current. General Electric Co., Schenectady, N. Y. Recently improved, type-B, d.c. motors.

Oil Seals. Aetna Ball Bearing Mfg. Co., 4600 Schubert Ave., Chicago, Ill. Application of a simple type.

Roller Bearings. Hyatt Roller Bearing Co., Newark, N. J. Pictorial and word description of bearings and various stages of their manufacture.

Rubber Products. B. F. Goodrich Co., Akron, Ohio. "The Wonder Book of Rubber" portrays romance of rubber industry and part played in its development by Goodrich.

BUSINESS NEWS

Robert & Co., architects and engineers, Atlanta, Ga., announce the appointment of J. Warren Armistead, Jr., member American Institute of Architects, as head of their architectural department.

The jacquard loom department of the Providence plant of Crompton & Knowles Loom Works will be taken over by a new corporation, subsidiary of the company, to be known as the Crompton & Knowles Jacquard & Supply Co. This division will be located in the old Anchor Webbing Co. plant, Pawtucket, R. I.

L. E. Wooten, of Charlotte, N. C., widely known textile machinery sales engineer, has been appointed southern representative for the Mitchell-Bissell Co., Trenton, N. J., manufacturers of porcelain guides. He will continues as vice-president and southern manager of the Lestershire Spool & Mfg. Co.

George C. Bryan and John C. Terhune, formerly with Lockwood Greene Engineers, Inc., are now associated under the name Bryan & Terhune at 2 Rector Street, New York. They offer engineering service for industrial plants, improvement of layout, machinery, steam plant and process construction plans and supervision, estimates and reports.

Formation is announced of the Lotte Chemical Co., 245 Broadway, Paterson, N. J. This company will handle a complete line of soaps, chemicals, oils, and gums for the textile trade, as well as paper and paper products for the textile and other industries. The president of the company is C. Walter Lotte, for many years manager of the Dundee Lake Works of the National Silk Dyeing Co.

Dr. Alfred Pfister has resigned as president and treasurer of Jacques Wolf & Co., manufacturing chemists and importers, Passaic, N. J., having sold out his interest in this business to Jacques Wolf. Dr. Pfister has sailed for Europe where he will spend the summer months touring Germany, France and Switzerland. Up his return in the fall, he will become associated with his son, Haymo V. Pfister, in the Pfister Chemical Co., Palisades Park, N. J.

Effective July 1, K. L. Schanbacher, previously acting manager of the New York sales office of the Victor Chemical Works, of Chicago, formally succeeded George C. Miller as manager. Mr. Miller goes to the general offices at Chicago.

Clarence Rowe has been appointed to take charge of its Chicago office at 19 West Jackson Boulevard, by the Torrington Co., manufacturers of machine needles.

Economy Baler Co., Ann Arbor, Mich., has divided its representation in the southern territory. R. S. Kerr, 387 Spring St., Atlanta, will cover Georgia, Alabama and Eastern Tennessee. The Terrell Machine Co., Charlotte, N. C., will handle sale of Economy balers in North and South Carolina and Virginia. J. Kirk Rowell, who formerly represented Economy at the Atlanta office, has severed his connections with the company.

American Cyanamid & Chemical Corp., a consolidation of the American Cyanamid Sales Co., the Kalbfleisch Corp., A. Klipstein & Co., Inc., John C. Wiarda & Co., Superior Chemical Co., Inc., and several other units, with executive offices in New York, established southern district sales offices and warehouse at Charlotte, N. C., July 1, under the direction of Paul F. Haddock, southern district manager. Mr. Haddock has been for the last 16 years district manager of A. Klipstein & Co.

The Roller-Smith Co., New York, announces the appointment of Alfred Suter, 200 Fifth Ave., New York, as sole distributor of Roller-Smith textile balances in the United States. Mr. Suter has specialized in equipment for this field for many years. The Roller-Smith Co. has developed its precision balances for textile applications in a wide variety of forms.

INDUSTRY-WIDE EVENTS

A CONTEMPORARY publication recently pointed out that primary prices, in New York, on certain staple fabrics are today only 17% of prices prevailing in January, 1920, whereas wages of mill operatives working on those fabrics are today 60% of the 1920 wage schedule.

The inference that might be drawn, and undoubtedly must be drawn, from this comparison is particularly dangerous in a subtle way. Without questioning the figures, we feel obligated to point out that any attempt to relate wage movements to price fluctuations is extremely illogical. It is true that, during a boom period, wages usually advance, and equally true that, during depression, wages decline. However wages have never advanced in full proportion to the sky-rocketing of prices at the top of a boom; it is to be hoped that their decline to a basis proportionate to the ridiculous prices quoted today is not sought.

The textile wage problem is sufficiently acute without being subjected to such a system of economics.—*Editor.*

Textile Exhibitors Meet

NO ACTION on the dates of the next International Textile Exhibitor's Assn. show was taken at the annual meeting of the organization, held in Boston, June 13, and it was agreed that the question should be taken up at the fall meeting. The following officers were reelected: president, E. F. Hathaway, Shawmut Engineering Co.; vice-president, W. I. Stimpson, Draper Corp.; secretary-treasurer, Chester I. Campbell.

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Germany Standardizing Machinery

GERMANY has established a special trade standards committee of the national standardizing body, according to F. J. Schlink, writing in the June American Standards Association *Bulletin*, and is devoting particular attention to textile machinery. Typical projects include the following for looms: shafts and bolts, motors and motor brackets, filling forks, beams, ratchet wheels, and shuttles. Height of spinning-frame driving pulley and design of spindle are included. Large savings are expected.

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Philadelphia Group Holds Outing

PHILADELPHIA Textile Manufacturers' Association held its annual outing, Wednesday, June 28, at Manufacturers' Country Club, Oreland, Pa. About 125 members and guests participated in the various events and the dinner. Joseph A. Harron, Harron Hosiery Co., was the winner of the golf trophy, with numerous other prizes presented for outstanding performance.

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S.N.E.T. Club Holds Meeting and Clambake

THE annual meeting of the Southern New England Textile Club, held at the Pomham Club, near Providence, R. I., June 18, was preceded by a reception and luncheon and followed by a clambake. About 150 members and guests attended. At the business meeting a memorial page in the records was set aside for the 11 members who had died during the year and, after reading of the treasurer's report, the usual $100 annual scholarship to the R. I. School of Design was voted.

The following officers were reelected: president, W. S. Pepperell; first vice-president, F. W. Howe; second vice-president, W. O. Buzzell; joint secretary-treasurers, P. C. Wentworth and W. C. Murphy. The only change in the executive committee was the election of H. J. Viens, Lorraine Mfg. Co., to fill the vacancy caused by the death of F. L. Bills.

Textile Calendar

Southern Textile Exposition Textile Hall, Greenville, S. C., Oct. 17 to 22, 1932.

Southern Textile Association, semi-annual meeting, Greenville, S. C., Oct. 21, 1932.

National Association of Cotton Manufacturers, Boston, Oct. 26 and 27, 1932.

Tenth National Exposition of Power and Mechanical Engineering, Grand Central Palace, New York, Dec. 5 to 10, 1932.

American Society of Mechanical Engineers, annual meeting, New York, during week Dec. 5 to 10, 1932.

Silk Association of America, annual dinner, New York, January, 1933.

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Textile High School Graduates

THE Textile High School, New York, graduated a class of 255 students, both boys and girls, on the evening of June 27. Meyer Bloomfield, lawyer, was the guest speaker at the commencement exercises.

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Safety Standards

A NEW safety code for places where there is a hazard of persons or materials falling through floor or wall openings, or from stariways and runways, has now been approved by American Standards Association, as part of the safety code for railings and toe boards. It includes specifications for temporary conditions.

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N.C. College's Textile Tests

THE Textile School of N. C. State College in summarizing its work for the 1931-1932 school year has issued a list of 57 different tests and analyses which it performed on the request of manufacturers and as a service to the industry. The tests covered analysis of samples, determination of causes of defects, methods for product ing certain effects, etc.

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Power Show in December

TENTH National Exposition of Power and Mechanical Engineering will be held at the Grand Central Palace, New York, Dec. 5 to 10, 1932. In the same week will be held the annual meeting of the American Society of Mechanical Engineers.

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To Standardize Cones and Tube Sizes

UNDER auspices of Division of Simplified Practice, Bureau of Standards, a general conference to develop final recommendations for sizes of paper cones and tubes adequate for stock purposes was held at 40 Worth St., New York, June 29.

TEXTILE WORLD'S

Cotton Digest

OCCASIONALLY some sane price action is announced in textiles. When it is, it stands out in brilliant contrast to the chiseling, muddling, and throat-cutting which prevail generally.

Such an announcement was made by Aberfoyle Mfg. Co. just as our last issue went to press. Briefly, the company served notice that it would advance its prices on its Durene yarns on July 15 (a month thence) if demand for its product did not increase.

There was nothing indefinite about the statement. It announced the date of the advance, the extent, and the reason for it. We particularly liked the reason. The company took this step "in the hope and belief that it will serve to prevent any further decline in the living standards of its employees."

In addition, Aberfoyle "followed through." On July 6 it announced that the new and higher range would become effective July 15.

This is quite different from the method employed in certain other yarn markets where weeks of uncertainty and price-slashing are allowed to precede a "sudden" price change—and where that change has been consistently downward. It offers hope that others may follow the example and that the end of ruinous prices may be in sight.—*Editor.*

Complete Discontinuance of Night Work Urged

ONE year's discontinuance of productive night operations in cotton mills, to begin Oct. 15, has been recommended to the industry by the Cotton-Textile Institute, George A. Sloan announced at the meeting of the Cotton Manufacturers Association of South Carolina at Asheville, N. C., July 9.

The recommendation first appeared in the form of a unanimous resolution at a meeting of the institute's executive committee June 16 and has since been endorsed by an overwhelming percentage of the directors, those in favor representing more than 9,000,000 spindles.

Officials and directors will immediately undertake to canvass the various mill managements as to their respective attitudes regarding the proposal.

It is expected that the new policy, which is recommended for the voluntary consideration of each mill, and which applies only to productive machinery (i.e. spindles in spinning mills and looms in weaving mills) will help to correct handicaps of long standing by concentrating operations and stabilizing employment on the day shift.

(Editor's Note: The above announcement, released just as this issue was going to press, represents the most important development in the cotton industry since the move to eliminate night employment of women and minors was first launched. This further step is a logical and constructive follow-through. Its vountary adoption by the industry will remove the greatest single obstacle to stability. Irrespective of the outcome, however, an opportunity is offered for determining the present atttitude of the industry on this vital matter.)

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Reduction in Spindleage and in Consumption

AN interesting report entitled "Ten Years of Cotton Textiles" has been prepared by the Association of Cotton Textile Merchants of New York and presents a record of important changes in the cotton textile industry during the last decade, along the lines of equipment, operation of that equipment, and the market for its products. Among the facts shown by the report are the following:

Dismantling of equipment has been extreme during the last two years; from Dec. 31, 1929, to Dec. 31, 1931, over 2,200,000 spindles have gone out of existence; a further loss of 589,352 spindles in five months of 1932 bears witness that the process still continues. . . . Spindle hours run in 1930 were 76,702,655,168, and in 1931 were 77,793,298,853, as against an average annual operation for the years 1922-29 of over 95 billion spindle hours. . . . Per capita consumption of cotton cloth declined from an average of 65.3 sq.yds. in 1922-29 to less than 51 sq.yds. for each of the years 1930 and 1931.

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Cotton Spinning Activity

OF the 31,737,174 cotton spinning spindles in place May 31, 1932, there were operated during the month of May, 21,639,352, compared with 23,409,246 for April and 26,379,082 for May, 1931. The average number of spindles operated during May represented 63.3% capacity on a single-shift basis comparing with 70.7% for April and 89.6% for May, 1931.

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Aberfoyle Price Rise Widely Applauded

FULFILLING promise of price advance, if sales did not show gain, Aberfoyle Mfg. Co. has announced an increase of 5c. per lb., effective July 15, for average grade, combed peeler yarn, on basis of 60/2. Company statement expressed appreciation of "widespread approval" accorded their decision by the industry. Many leaders praised the move.

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Cotton Goods Activity

CONSIDERING the condition of business, the cotton textile industry made real progress in May in attempting to adjust production to demand. According to the Association of Cotton Textile Merchants of New York, production during May amounted to 183,717,000 yd., or at the rate of 45,929,000 yd. per week. This was 10.4% less than the weekly rate for April and 24.8% less than the weekly rate for February. Billings during May were 170,485,000, or 92.8% of production; sales were 145,756,000 yd., or 79.3% of production.

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Wide Sheetings Reduced

LEADING makers of sheets and pillow cases issued new and reduced price lists about the middle of June. Several revised their series of trade discounts. Intimation was given that prices would be advanced on receipt of sufficient business. Wide sheetings were also reduced. Pepperell 10-4 bleached were priced at 23½c.; Utica at 32c.; Mohawk at 25c.; Duright Anchor at 35c.; Pequot at 35c.

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New Yarn Agency

ELLIS-CRUMBLISS CO., Chattanooga, Tenn., with offices in the Provident Building, has been organized

by George H. Ellis, formerly vice-president of Dixie Mercerizing Co., of Chattanooga, and Henry Crumbliss, until recently with Cannon Mills. The new company has the exclusive representation in all southern States, with the exception of North Carolina, for the yarns manufactured by Cannon Mills, and the products of a subsidiary, the Ewing-Thomas Corp., of Chester, Pa. In North Carolina the Ellis-Crumbliss organization will handle only the products of Ewing-Thomas.

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Cotton Price Comparisons

THE following are prices of key items in the cotton industry. Current prices are given with comparisons:

	July 1	June 1	July 1 1931	July 1 1930
Spot Cotton N. Y....	5.75	5.05	10.15	13.65
Ditto, high previous month.....	5.80	5.95	10.40	16.15
Ditto, low previous month.....	5.00	5.30	8.25	13.25
10s frame spun yarn..	10¾c	11¾c	17¼c	23¾c
10s/2 carded skeins...	11 c	12¾c	17¾c	23¾c
20s/2 carded peeler warps.....	13½c	14 c	20¾c	26 c
60s/2 combed peeler warps.....	33 c	40 c	51½c	61½c
60s/2 mercerized cones	50 c	53½c	67½c	78 c
37-in., 3-yd. drill.....	4½c	4½c	6½c	8½c
38½-in. 64x60s.....	3 7/16c	3 c	5½c	5½c
36-in. 4-yd. 56x60s...	3¾c	4 c	5½c	7½c
Denim. 2. 20s.....	8½c	8½c	11 c	15 c

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Activities of S.T.A.

THE Gaston County Division of the Southern Textile Association was formed at an organization meeting June 10. John A. McFalls acted as temporary chairman. An executive committee, selected to complete the organization and name officers for the new division, is composed of D. H. Whitener, A. P. Richie, George R. Grice, M. R. Adams, and D. R. LaFar.

Lewis W. Thomason, southern district manager, New York & New Jersey Lubricant Co., with headquarters in Charlotte, N. C., was elected chairman of the associate members division of the Southern Textile Association, organized at a dinner in Hendersonville, N. C., June 23, just prior to the annual meeting of the association. The membership of this division will consist of salesmen, technical representatives, etc.

Summer hats for men are being made of treated cotton braid.

COTTON IN THIS ISSUE

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S. C. Assn. Elects

S. MARSHALL BEATTIE, president of Piedmont (S. C.) Mfg. Co., was elected president of the Cotton Manufacturers Association of South Carolina, at its annual meeting at Asheville, N. C., July 8-9, succeeding W. S. Nicholson, of Union, S. C. C. M. Bailey, Clinton, S. C., was elected vice-president, while W. P. Jacobs, also of Clinton, was re-elected secretary. The new executive committee consists of L. O. Hammett, Alfred Moore, Walter S. Montgomery and H. Arthur Ligon.

W. G. Query, chairman of the South Carolina Tax Commission, urged manufacturers to advocate governmental economy as the only means of reducing the burdens of taxation.

The banquet Friday evening was featured by a cotton style show and an address by Dr. H. N. Snyder, president of Wofford College.

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Cotton Mill News

PELZER (S. C.) Mfg. Co., recently awarded contract to the Gallivan Building Co., Greenville, S. C., for the erection of a new $15,000 office building to replace the one destroyed by fire several weeks ago. J. E. Sirrine & Co., of Greenville, prepared plans.

Robert Yarn Mfg. Co., Roseboro, N. C., has been organized by B. H. Hamilton, P. O. Tatum and R. A. McGinnis, all of Salisbury, N. C., with authorized capital stock of $200,000, to take over and operate the Rosedale Mfg. Co., of Roseboro, a 5,000-spindle yarn mill.

Selma (Ala.) Mfg. Co., which is operating the Stroud-Holcomb Cotton Mill, Birmingham, Ala., is considering the installation of its own power plant.

Melville Mfg. Co., Lincolnton, N. C., a 6,000-spindle combed yarn mill, has been placed in a receivership upon petition of first mortgage bondholders. W. W. Glenn, secretary and treasurer of the mill, was named receiver by Judge Wilson Warlick. This mill had been showing a manufacturing profit.

Lowe Mfg. Co., Huntsville, Ala., filed a petition in bankruptcy in the U. S. District Court, June 24, listing liabilities at $2,100,687 and assets at $2,030,218. Claim of the principal creditor, the Hunter Mfg. & Commission Co., was listed as $2,051,956.

Shelbyville (Tenn.) Mills, Inc., of which the Hunter Mfg. & Commission Co., with a claim of $1,204,000 is the principal creditor, filed a petition in voluntary bankruptcy in the U. S. District Court in Nashville, Tenn., June 27. A. F. Mullins, Jr., who has been secretary and assistant treasurer of the company, was appointed receiver.

Russell Mfg. Co., Middletown, Conn., has entered receivership to conserve assets. Judge Earnest C. Simpson on the petition of William C. Fisher, vice-president, and Reginald L. Robins, Milton, Mass., trustee of the estate of Henry G. Hubbard, stockholder, has named T. Macdonald Russell, president, and Daniel R. Weedon, treasurer, as temporary receivers.

The Kendall Co., Boston, has acquired the Giswoldville (Mass.) Mfg. Co. through an exchange of stock. The Lewis Mfg. Co. division of the Kendall Co. and Griswoldville are both in the cheesecloth and surgical textile line.

Irene Damask Mills, Gaffney, S. C., is to continue operation of the plants under direction of Receiver Henry C. Moore for another 12 months period.

West Boylston Mfg. Co., Easthampton, Mass., has adopted a plan for incorporation of a realty company to take over and liquidate the remaining assets of the parent company excepting only the stock of the West Boylston Mfg. Co. of Alabama and cash in hand.

Mooresville (N. C.) Cotton Mills will continue to operate under the direction of W. B. Cole, receiver, it was ordered by Judge Michael Schenck Hendersonville, N. C.

Lane Cotton Mills, New Orleans, La., are having plans drawn for a two-story, 180 x 300 ft., reinforced concrete and steel addition to present plant.

TEXTILE WORLD'S

Wool Digest

BUSINESS is better in wool goods. It isn't as good as some claim, but it's looking up.

The industry has a chance to demonstrate its ability to profit by this improvement. If the spurt continues, manufacturers are entitled to a fairer price. If, on the other hand, it proves temporary, any temptation to chisel at present levels in a wild attempt to get orders, will be fatal to the industry as a whole. The reductions previously made were far too drastic in our opinion; further declines are unthinkable.

Raw wool is at a very low price; goods prices were slashed out of proportion, in view of volume in sight; consumers need goods. This combination of circumstances should make possible a healthy advancing market—unless manufacturers boot away the chance to sell at a profit, as they did a year ago.—*Editor.*

Worsted Price Advance?—Maybe!

WORSTED suitings mills talked spiritedly of a coming price rise, but up to July 1 it appeared the wish was father to the thought. Certain companies enjoyed active business, as continued reaction to the drastic price cut of end-May, and buyers indicated definite though cautious interest in fall. Those predicting an advance based their forecast on the recent firming of raw wool, arguing that if the primary market maintained its early July levels, there was possibility that increased fabric demand would justify a price increase. Higher levels in suitings would be almost certain, if wool advanced, it was contended.

Meanwhile, however, fall outlook was hazy. A slightly better tone was manifest generally when July opened, and there was considerable talk of "good business coming." Sales reports by worsted mills, suggested that this might be something more than just whistling in the dark, but the buying was too evidently a price proposition to be relied upon.

As regards a price advance, the worsted group appeared to be leaving the initiative to Samuel Hird & Son, who were first in announcing the recent 25% cut. Up to the beginning of the current month, Hird had taken no step in that direction, and likelihood of early action was doubtful.

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Report Urges Weavers To Reduce Output

SUPPLY and demand problems of the wool goods industry, 1921-1932, were analyzed and possible solutions considered, in report on survey made by Industrial Research Department, Wharton School of Finance & Commerce, University of Pennsylvania. The report, made public June 30, dismissed the idea of any immediate outright scrapping of looms as "hardly desirable, even if it could be accomplished." Efforts at curtailment, however, would have an immediate effect, the report added, "if they met with any success at all." Considering curtailment further, the report held that "whatever gains might be obtained (from this method) would seem enough to justify the effort." The report emphasized the fallacy of hoping to get back to pre-war or 1923 business levels, and urged instead the need of getting current capacity in line with probable demand of the next few seasons. The lack of adequate data on number of broad looms in the country was deplored, as handicapping the survey. "However," was added, "it is possible a revival of business may find the total loomage of the wool weaving industry in line with demand."

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Curtailment Aids Blanket Division

WHILE the fall outlook for the blanket industry is far from reassuring, the hazard has been greatly mitigated by judicious curtailment of output. Thurmond Chatham, president, Chatham Mfg. Co., Winston-Salem, N.C., stated June 23, after meeting in New York of Wool Blanket Manufacturers Association, that curtailment since the first of the year has exceeded aggregate curtailment in ten years previous. Blanket manufacturers at the meeting estimated industry to be operating at not more than 30% of capacity.

This situation has made manufacturers confident regarding outlook, so far as prices were concerned. They hope for a pick-up in demand in August, but are determined not to amass stock until actual sales warrant.

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Peerless Enters Blanket Field

PEERLESS Woolen Mills, Rossville, Ga., is offering a 66x80, 3½ lb. virgin wool blanket through Mill Associates, New York, at $2.65, which compares with a current market on a similar product at $3.75. The company has lately erected a new mill unit and will produce blankets in addition to its reguar line of cassimeres. The new low price has caused considerable comment.

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Bartlett Heads Mill Syndicate

INTERESTS headed by Raymond S. Bartlett of Boston have purchased the Georges River Woolen Mills, Warren, Me., the Carter & Rogers mill at Lebanon, N. H., and have inspected several other New England mill properties which may be added to the group if conditions warrant. The two mills mentioned are listed as having 110 looms producing flannels, overcoatings and dress goods.

Mr. Bartlett was general manager of the American Woolen Co. until March 8, 1930. He later headed the New England Woolen & Worsted Mills Co. which worked in conjunction with New England Industries, Inc., the latter being the group of Maine cotton mills purchased by the Insull power interests.

The output of the mills includes both men's and women's wear fabrics; the women's wear goods will be sold through the Glenerry Mills, New York, of which A. L. Goldfine is selling agent.

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Rabbit's Hair For Sport

RABBIT'S hair fabric, a combination of Angora rabbit fur and wool, was announced for fall sport apparel by American Woolen Co. The fabric was stated to have "unusual richness and depth" and was available in a wide range of colors, including reds, browns and beiges. It sell at $1.65 per yd.

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Mills Ask Mid-Year Statements By Clothiers

THE question of credit extension, a problem of growing importance in fabric divisions, has been laid frankly before clothiers in a joint request by leading mills for mid-year statements. An advertisement, June 20, in *Daily News Record*, over the signatures of 24 leading manufacturers, including such firms as American Woolen Co., Samuel Hird & Co., and Sidney Blumenthal & Co., asked for reliable information from fabric buyers on their financial status,

which, it was pointed out, would help toward greater cooperation in credit extension. The signees of the advertisement included silk and wool weavers and fabric distributors.

The appeal was favorably received by clothing groups, and several credit managers of important apparel firms issued statements approving the idea of mid-year financial reports.

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Lightest Ever Woven

JACQUARD worsted dress fabrics ranging from 5 oz. to as low as 3.1 oz. and woven in designs commonly employed for silk neckties were included in the exhibition of student work held at the Philadelphia Textile School commencement. The finest, said to be the lightest of its kind ever woven, is filling-faced, 80 ends and 70 picks, 36 in. wide, 80/2 cotton warp, and 50s French-spun merino filling, 70% wool and 30% cotton. A 4-oz. fabric employs same filling with 2/68 worsted warp, voile twist.

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Blanket Code Approved

L. R. GILBERT, Division of Trade Standards, Department of Commerce, announced, June 11, that the proposed commercial standard for wool and part-wool blankets, recommended at New York meeting March 11, had been approved by a majority of the blanket industry. The code therefore becomes effective, as of Dec. 31, 1932. Detailed analysis of the standard appeared in TEXTILE WORLD, March 19. The code permits use of the term "part wool" on blankets containing 5% or more wool.

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Fleeces Improve

A BROADER call for fleeces and a somewhat stronger sentiment characterized Boston trading at the end of June. Stiffer prices in some sections of the west encouraged dealers to resist pressure for lower levels. Occasional reports were heard in the primary market of buyers paying higher prices than they had originally offered on certain lots. The improved tone was too faint to do more than stimulate small orders, and it would have to hold through most of the current month, to instill any real confidence.

Fashion shows versatility of felt in wide range of costume accessories. Fabrics of which above items are made are from American Felt Co.

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Army Favors Kirsner Blanket

THE Infantry Board has recommended to the War Department that the Kirsner blanket be adopted as army standard following tests recently completed at Fort Benning, Ga. The blanket is of worsted warp and woolen filling, in both 3½ and 2½ lb. weights. It was devised by Lieut. Harry Kirsner in 1927 when he was attending the Philadelphia Textile School.

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Wool Mill News

HAMILTON Woolen Co., Boston, voted, June 27, a dividend of $1.00 per share, payable July 15 to stock of record June 30. Last January the same company paid a dividend of $2.00 per share and also an extra dividend of $2.75.

A new company, $300,000 capital, is being formed at New Braunfels, Tex., to construct and operate a mohair and woolen mill. H. A. Wagenfuehr, secretary, New Braunfels Textile Mills, and president of the New Braunfels Chamber of Commerce, will be an officer of the new company. A tract of about 10 acres, known as the Landa property, near the Comal and Guadalupe Rivers, is being secured for mill site, and initial units, to cost over $150,000, with equipment, are projected. James McDowell, New Braunfels, will be another officer of the company.

Tingue Textile Corp., Seymour, Conn., has been incorporated with authorized capital of $50,000, consisting of 500 shares of common stock, par value $100. Concern was formerly The Tingue Mfg. Co., capitalized at $400,000. It manufactures pile fabrics and worsted yarns. Kendall Williams is president, with Robert Cookson, treasurer and Kenneth R. Gregory, secretary.

Serge Lamoureaux, Woonsocket, R. I., has been appointed temporary receiver under $15,000 bond of the Woonsocket Spinning Co. by Judge Copotosto in the Superior Court at Providence. Appointment was made on petition of Sarah R. Tessier, creditor with a claim of $13,850.56. A permanent receiver will be named later.

Consolidation of six units of Goodall Co., Palm Beach suit manufacturers, now distributed through various buildings in Knoxville, Tenn., is projected for next summer, A. M. Ward, Goodall treasurer, announced June 15 in Knoxville. The units will be assembled in either a specially built factory or in a leased building; a site will be chosen in outlying district of Knoxville.

A net loss from operations, markdown of inventory and depreciation charges, of $1,742,616 for the fiscal year ended May 31, was reported by Farr Alpaca Co., Holyoke, Mass., at directors meeting June 22. This compared with a loss of $1,688,566 in the previous year and a net profit of $822,704 in the year ended May 31, 1930. Deducting dividend payments and establishment of $1,000,000 reserve for inventory fluctuations, the surplus account was reduced to $301,837. Directors voted to omit dividend payable June 30. A proposal to liquidate was rejected by strong vote.

Empire Worsted Mills, Inc., Jamestown, N. Y., submitted a settlement offer to creditors in June, providing for payment on basis of 30% cash and 40% in five-year debenture bonds. This offer, which was contingent on ability to obtain additional capital, superceded an offer of 25% cash previously submitted and rejected.

The "dream" mill village of William M. Wood, at Shawsheen, Mass., was sold July 4, to Andover-Shawsheen Realty Co. Textile Realty Co., American Woolen Co. subsidiary, disposed of property comprising about 250 dwellings for reported sum of $1,000,000. Village had been developed by Mr. Wood while president of American Woolen Co.

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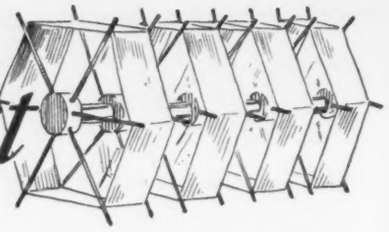
Price Trends in Wool

THE following are prices of key items in the wool industry. Current prices are given with comparisons covering a month ago, a year ago and two years ago:

	July 1	June 1	July 1 1931	July 1 1930
Fine and fine med. territory	$0.34½	$0.42	$0.56½	$0.72
Ohio 3/8s	.14½	.18	.22	.30
Tops, fine, 64-66s	.54	.63	.83	.99
Average 3/8s	.45	.51	.64	.81½
High 1/4	.39	.46	.54	.74
Noils, fine	.37	.36½	.42	.58½
1/4	.25½	.26	.32	.44
2-40s 60s wstd yarn	1.10	1.12½	1.32½	1.50
3192 serge	1.22½	1.35	1.65	1.90

TEXTILE WORLD'S

Silk Digest



MANY broadsilk manufacturers are spreading themselves out too thin. In their attempt to entice some of the restricted volume of business, they are offering a range of designs and colors far too wide to permit a profit under present conditions.

There is no doubt, of course, that the company which limits its line to relatively few numbers will lose some business to firms which have everything under the sun to offer. However this loss is not comparable with the proportionate gain in margin which specialization promises. There is far too little business to enable a profit on a widely diversified line; in fact, every item in such a line will probably show a loss.

The situation today calls for utmost caution in planning production schedules—and this applies to variety just as much as it does to volume.—*Editor.*

Importers Hope For Silk Advance

RAW silk entered July considerably weaker in tone, but with importers talking of a possible advance when fall buying develops. Speculative covering dominated through June, and while key grade spots showed no appreciable decline, futures softened decisively. Just before Independence Day "dollar silk" was talked off, and leading firms were selling 20/22s for fall months at $1.05. Industry pinned its hopes on increased demand from broadsilk and hosiery divisions, but outlook there was doubtful.

Japan offered little encouragement. Spring crop was estimated to be 14% below last year, to which importers answered that "40% curtailment would have been more to the point." End-June advices from Yokohama reflected much uncertainty; effort was being made there to effect firmness but financial pressure to liquidate was strong.

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Japan Frowns on Costly Relief Plan

JAPANESE government is disinclined to grant costly aid asked by suffering silk industry. Filatures and traders proposed a relief plan which would virtually mean that the government would assume all present accumulated losses; this means both silk and land debts, which would increase national debt by nearly 2,000,000,000 yen, and the plan has scant chance of adoption, reports Commercial Attache H. A. Butts, Tokio, to the Department of Commerce.

Mr. Butts built alarming picture of conditions in silk country. He estimated that 80% of silk firms are unable to meet bank debts, and unpaid accounts now total 100,000,000 yen; conditions are near the point where only larger companies can continue operation.

Advices from Yokohama sources confirmed above. According to Yokohama press, 10,000,000 yen in wages is in arrears to 400,000 filature workers. Statistics tell the story: 260 factories in 15 prefectures owe 2,000,000 yen to 50,000 operatives, and another 190 filatures in Nagano Prefecture owe 1,150,000 yen to employes.

Japanese Government is considering many possible solutions, including the drastic idea of socialization; no definite action is yet in prospect.

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Industry Accepts New Weighting Rules

SILK industry has accepted new weighting rules. Federal Trade Commission announced, Washington, June 17, that weighting standards adopted at conference in New York, April 21, had been approved by the industry. The code was published complete in TEXTILE WORLD, April 30. Briefly, it specified that all silk goods containing more than 10% foreign substance, except black, which shall not exceed 15%, shall be designated as "weighted." Goods having less weighting than above stated may be designated "pure dyed."

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Throwsters Issue Warning

THROWSTERS Research Institute has authorized its secretary, Dean Hill, to warn weavers, jobbers, converters and others that the present trend away from the orthodox weaving of two picks right and two picks left in favor of 6x6, 8x8, 12x12, etc., for bringing out heavy pebble effects in rough crepes, will injure uniformity, as the evening-up afforded by the two twists in a 2x2 construction is thereby sacrificed. Filling suitable for even a 6x6 construction, Mr. Hill advises, can be thrown only at a high cost, and low prices on such fabrics should be looked at with suspicion.

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Curtailment Urged on Fall Fabrics

BROADSILK industry entered July under dubious auspices, and the mid-year financial reports, when issued, were not expected to improve the situation. Close observation in recent weeks indicated that raw silk decline, while a vital factor, was far from the only problem, and that this difficulty could be much ameliorated by more drastic reduction of inventory. Price-slashing prevailed when the lightweight season ended, and numerous leading firms disposed of large stocks at levels well below cost. Certain of these weavers had produced recklessly, some offering as many as 300 color ranges. It is significant that an important company which limited the line to slightly over 30, now is comparatively safe position.

Severe curtailment both in range and output is only rule to follow, if firms hope to survive the fall season, leaders believe. Failure to pass the design piracy bill has weakened the outlook and some dye houses announce they will print any goods given them, suggesting that the spring season may see open piracy in broadsilk designs. Trade has approached fall season cautiously, so far, with low production.

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Belding-Corticelli Merger Effected

CONSOLIDATION of Belding-Heminway Co. and Corticelli Silk Co., two old firms whose names are historic in the broadsilk industry, is now practically completed. Corticelli stockholders approved the merger at a meeting June 29, in New London, Conn. Corticelli preferred stockholders will receive about $35 per share in addition to three-quarters of a share, Belding-Heminway common; holders of Corticelli common also will receive three-quarters of a share of Belding-Heminway, but no cash. Contracts provide for immediate payment of substantial cash deposit and balance of cash and all stocks within 90 days.

Details were not disclosed. Raymond C. Kramer, president, Belding-Heminway, was expected to head new firm, with J. P. T. Armstrong, president, Corticelli, continuing in executive capacity. Explaining negotiations, June 23, Mr. Kramer said: "Investigation showed customers of both firms could be better served, at lower sales cost, by a merger."

Combination will permit raising of quality standards through ability of combined company to install new equipment and processes which will produce a silk thread superior to any yet available.

Belding-Heminway Co., $10,000,000 capital, was established just after the Civil War; has mills at Putnam, Conn., Petaluma, Cal., Belding, Mich. and New York; total spindles 11,000. Corticelli Co. was established 1867, as Brainard & Armstrong Silk Co. Corticelli name was adopted in 1922. Company owns twelve mills in Connecticut and Massachusetts.

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Exchange's Saleless Day

UNCERTAINTY in silk trading reached a climax June 14, when the National Raw Silk Exchange, New York, recorded not a single sale throughout the day. The saleless day came during a period of pronounced weakness, and general apathy was evident among silk buyers.

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Blumenthal Prices Out

IN a statement telling of active early interest in transparent velvets for fall, Sidney Blumenthal & Co., June 25, announced the price for the new season on "La Loie Splendide" piles at $2.02½. It was believed that this price would be adopted by all domestic velvet houses for fall.

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May Revise Trade Rules

A REVISION of trade rules governing transactions between buyers and sellers of raw goods is under consideration by the Silk Association. The present rules which were adopted in 1928 may be changed to bring them more into line with current market practice. A committee representing the buyers of raw goods and a broad silk manufacturers' committee representing sellers will submit recommendations for their respective groups.

Brocade transparent velvet featured by Cheney Bros. for fall, showing novel ribbed treatment of pile

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Lewine Renominated Exchange President

NOMINATING committee of National Raw Silk Exchange, New York, June 29, named Jerome Lewine, of H. Hentz & Co., to succeed himself as president, which would be his third term. Other nominees were: For first vice-president, J. Chester Cuppia, E. A. Pierce & Co.; for second vice-president, Charles Muller; for treasurer, Floyd Y. Keeler, Orvis Brothers & Co.; for governors (three years), Paolino Gerli, E. Gerli & Co.; Albert Lindenberg, Oscar Heineman Corp., Chicago; Paul A. Salembier, Salembier & Villate, Inc.; for governor (one year), Frank W. Lovatt, Lovatt Bros. Election will be held July 19 at annual meeting.

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Salembier Studio Opened

L. G. SALEMBIER has opened the Salembier Studio at 135 West 36th St., New York. This organization offers a complete styling and consulting service, which covers the yarn, fabric, cutting and retailing fields effecting coordination among them which is an aid to selling. Mr. Salembier has applied for a patent on a means for obtaining from three to seven different patterns on printed goods in a single run through a printing machine by use of superimposable designs, thus avoiding large production of individual patterns.

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Dinner Committee Named

THE committee on arrangements for the sixty-first annual dinner of the Silk Association to be held January, 1933, follows: W. Robert Blum, United Piece Dye Works; John P. Maquire, Textile Banking Co., Inc.; Harold Rubin, American Silk Mills; Henry E. Stehli, Stehli Silks Corp.; and A. B. Strange, Read & Lovatt Mfg. Co.

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Silk Mill News

SPARTAN Silk Mills, Inc., with mill in Paterson, N. J., has been incorporated in New Jersey for broadsilk manufacture; capitalization is $75,000.

Willimantic (Conn.) Silks, Inc., are improving grounds and constructing additions connecting three buildings.

Plans are under way for a reorganization of Henry Doherty Silk Co., Clifton, N. J., recently placed in receivership. Henry Doherty, Jr., president, heads project to form a new company to take over the organization. Mill has been closed but may soon resume.

Bernesco Silk Co., Berwick, Pa., plans to rebuild portion of mill recently destroyed by fire with loss of $25,000.

American Silk Mills expansion program providing for doubling loom facilities at Lancaster, Pa., is under way, it was reported June 30. Company also plans enlargement of selling force.

Committee to work out credit adjustment plan for Culpeper Silk Mills, Inc., Culpeper, Va., was appointed at meeting of creditors and a representative of Culpeper National Bank, held at New York offices of Silk Association. Benjamin Nadel, accountant, reported that the company's liabilities total $78,000 against $61,000 assets.

Watertown (N. Y.) Silk Mfg. Co., controlled by Concordia-Gallia Silk Co., Philadelphia, Pa., and which has been operating actively since April, 1931, is to leave Watertown, it was learned June 28. C. W. Draucker, superintendent, refused comment. Mill normally employs 225 persons, but layoffs have reduced this to 65. Company has plant built in 1926 at cost of $125,000.

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Silk Price Tables

THE following are prices of key items in the silk industry. Current prices are given with comparisons covering a month ago, a year ago and two years ago:

	July 1	June 1	July 1 1931	July 1 1930
Crack XX 13/15 white 78%.....	$1.24	$1.15	$2.60	$3.75
Tram, 5 thd Japan 85%	2.00	2.30	3.80	4.45
Crepe 3-4thd 14/16 Bob	1.70	1.75	2.80	2.90
60s-2, spun silk.....	2.75	2.75	3.55	4.20

TEXTILE WORLD'S

Rayon Digest

OUR LAST issue, in which we bemoaned the rayon price cut to the 65c. level, was barely off the press before we had something else to moan about. The 55c. price, which had been a sub-rosa level, was promoted to the more dignified position of a list price.

Of course, if the industry insists on selling 150 denier viscose at 55c., it is more honest, and better business, to admit it publicly. The puzzle is, however, why it wants to sell at that price.

Talk of increasing volume through this lower price is fine—as talk. But volume sufficient to return even the most modest profit at that price simply isn't "in the wood" just now—nor will it be in the near future. So rayon producers merely take it on the chin once more.

Whether it's a "war to the finish," we don't know. But we do know that failure to shut down plants, to liquidate surplus stocks, and to resist further price degeneration, will eventually mean everybody's finish.—*Editor.*

Buyers See Price War In Yarn Reductions

CONTINUOUS price-cutting and the abolition of even the most firmly established guarantees made for actually hesitant trading in rayon as July opened. Buyers were hopelessly bewildered by the situation and momentarily expected further reductions. Official price of 150 denier, the key viscose process number, was still 55c. up to Independence Day week-end, but there were persistent reports of sales at 45c. Inasmuch as virtually the entire industry was believed to be selling at, or below cost, yarn consumers viewed it as a price war among producers. The decline brought a sharp drop in acetates, reductions running from 15c. on 150 denier to 50c. on 45 denier.

Buyers first welcomed the cuts as tending to stability, but subsequent trading was so hesitant and true prices so variable, that claims of being "at bottom" were discounted. Wider markets for synthetics suggested themselves immediately, and it seemed likely rayon might win back some of the volume lost to silk. One normal reaction at the end of June was strong pressure for restoration of guarantees.

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Organon Sees Rayon In Elimination Fight

ELIMINATION or the absorption of certain rayon producers is one of the probable outcomes of the present "silly downward vortex" of rayon prices, it is predicted in the June issue of *Textile Organon,* published by the Tubize-Chatillon Corp. *Organon* sees rayon paralleling the early days of automobile development, during which period numerous automobile companies dropped out of the picture. When the sky clears, this publication adds, "some rayon producers will go, and others will emerge even stronger than before."

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Rayon Profitless, Says Enka Official

C. VANDERHOOVEN, secretary, American Enka Corp., sees rayon a profitless industry, as result of conditions which he terms "appalling and critical." In an address, June 21, in West Asheville, N. C., he said the "detrimental influence of the depression had worked itself into the very heart of the rayon industry; orders and prices have dropped to the point where profits in manufacture have disappeared."

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Yarn Protection Hint In Fabric Guarantee

ONE rayon consumer, at least, believes that prices have hit bottom. Duplan Silk Corp., about 70 per cent of whose business is in rayon fabrics, announced June 27 a price guarantee for four months, on the firm's chief staple fabrics. The step was particularly significant, in view of the reputedly close affiliations between Duplan and the Viscose Co.; many trade factors interpreted it as indicating a Viscose guarantee but this was denied by the producing firm. However, the fabrics guaranteed include only one rayon line, so Duplan obviously assumed that raw silk prices also would not decline appreciably beyond end-June levels. The fabrics protected by the guarantee are: two flat crepes, two Canton crepes, one sheer, and one low-priced rayon.

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Washington Unfriendly To Silk Tariff Plea

LEGISLATIVE opinion in Washington does not hold out much hope for favorable action on the rayon industry's petition for a 75c. per lb. tariff on raw silk. The following dispatch from TEXTILE WORLD'S Washington correspondent is particularly interesting, as giving Capitol Hill's reaction:

"As evidence of the increasing intensity of inter-commodity competition, the rayon industry's belated petition is interesting but the circumstances under which this proposal was brought forward rob it of any particular significance. That the outstanding firms in the industry were induced to subscribe to the request occasioned some surprise because, regardless of any merit that a duty on silk might have, the proposal was not handled in a manner to assure it of any consideration. The brief evidently went overboard in the big wave of correspondence that has flooded Congressional offices. The proposal never was mentioned in the Senate Finance Committee and several members of the committee did not know anything about it."

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Defer Weighting Parley

EXPLAINING that many manufacturers and rayon experts would not be available during summer months, L. R. Gilbert, Division of Trade Standards, Bureau of Standards, announced June 18, that general conference on rayon weighting, proposed for July, had been postponed until late September. Conference was to act on standards adopted at meeting in New York, June 8.

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DuPont Plants Resume

DUPONT RAYON CO., Old Hickory, Tenn., has resumed production following a shutdown of several weeks. Buffalo, N. Y., plant also has resumed production, at less than 20 per cent of capacity.

•

Industrial Plants Close for July

INDUSTRIAL Rayon Corp., through its president, Hiram S. Rivitz, announced July 1, a 30-day shutdown, effective July 2, of both Cleveland and Covington, Va., plants. Mr. Rivitz

stated move was "made necessary by highly competitive conditions resulting in constantly lower price levels and a gradual increase in inventory" and he expected that the step would serve to reduce inventories to normal. He added that the tubular cloth division, Cleveland, continues in full operation.

•

Soviet Extends Nitro, Viscose Manufacture

PARIS office of the Department of Commerce's Textile Division reported June 20 that Soviet authorities propose to establish a new enterprise for manufacture of rayon comprising two factories for production of nitrocellulose and one for viscose. Press advices from Rome, June 21, stated that Soviet had placed 2,000,000 ruble order for rayon machinery with Italian machine firms.

•

"Bisfa" Rules Change Standards

"BISFA Rules for 1932" contains numerous important changes and additions. H. Iselin, secretary, Bureau International pour la Standardization des Fibres Artificielles, reviews the changes in an article in June *Rayon Record*. The standards comprise regulations for determining the yarn number, tensile strength, extension at the breaking point and the twist of viscose and cuprammonium yarn, which have been oiled or sized or have a greater twist than 400 turns per meter.

He states:

"The regulation which provided that the goods to be tested were to be conditioned for 24 hours before each test has been deleted. This conditioning of 24 hours' duration is now only prescribed for the strength tests.

"For the determination of average yarn number skeins are conditioned for 2 hr. and bobbins for 4 hr. in an atmosphere approximating standard atmosphere. All the skeins to be examined can be weighed and dried in one lot, weighing being carried out in a drying room under conditions of interrupted air circulation.

"A modification has been introduced into the strength determination in that now the thread is no longer to be given the necessary tensioning by hand at the start but by means of a suspended weight. In regard to the twist tests, only one modification has been decided on, namely, that tensioning is to be effected by means of a suspended weight and not by hand.

"In the rules for the determination of the selling weight and also for determining yarn number, a moisture regain of 11% with a 1% tolerence which was fixed for viscose and cuprammonium rayon, enables the seller to supply yarns with a moisture content of 12%. In the case of yarns with a twist of more than 400 turns per meter, determination of the selling weight is to take place without the yarns being deoiled or desized."

New synthetic yarn development is "shardo - crepe" stocking made from Tubize Chatillon's Chardonize (Hanes Associated Mills)

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•

French Accord Raises Prices

ATTEMPTS at national and international agreements featured recent developments in the European rayon industry, according to reports June 20, to the Commerce Department's Textile Division from officers abroad. Trade Commissioner George W. Berkalew, Paris, reported an accord has been reached in principle between important French rayon manufacturers, including Soie de Calais, and Soie de Valenciennes, providing for uniform prices and allocation of production quotas. Another accord has just been reached between French and German makers. Because of harmony among French producers, the price of certain types of viscose has been raised in France, and tone has improved.

•

Big Drop in Imports

TEXTILE WORLD offers the following comparative April-May figures on imports of rayon and other synthetic fibers, based on report from Bureau of Foreign and Domestic Commerce:

Yarns	Pounds April	Pounds May	Dollars April	Dollars May
France	6,368	2,064	7,603	975
Germany	17,685	14,613	11,888	9,890
Greece	2,411	13	1,990	11
	26,464	16,690	21,481	10,876
Waste				
Switzerland	5,036	94	1,559	62
Canada	32,766	868	3,865	64
	37,802	962	5,424	126
Cut or Staple Fiber				
Germany	.....	29,525	.....	8,032
United Kingdom	.....	300	.....	128
	61,379	29,825	16,043	8,160

Hamlin, Rayon Sales Pioneer, Retires

GEORGE O. HAMLIN, rayon merchandiser since the industry was in its infancy, announced June 28 his retirement as of July 1, as general sales manager of the Viscose Co. W. C. Appleton, assistant sales manager, succeeds him. Mr. Hamlin's action terminated a service of more than 21 years. Mr. Hamlin preceded his generation of service in Viscose organization with service in the old Lansdown (Pa.) Artificial Silk Co., later absorbed by Courtaulds, Ltd., parent company of the Viscose Co. Nominally sales manager of that firm, his responsibilities actually exceeded that title, as he was in charge of active management directly under Samuel A. Salvage, president. Mr. Hamlin said he was retiring from all business activity. Mr. Appleton, Harvard graduate, joined Viscose seven years ago, prior to which he had varied textile mill experience. Mr. Hamlin was honor guest at staff luncheon July 6, and received several farewell gifts.

•

Rayon Prices Lower

THE following are prices of pivotal rayon yarn numbers. Current prices are given with comparisons covering a month ago, a year ago and two years ago:

Viscose Process	July 1	June 1	July 1 1931	July 1 1930
75 denier (18-30 fils.)	$0.80	$1.00	$1.35	$1.90
100 denier (40 fils.)	0.65	1.00	1.10	1.50
150 denier (40 fils.)	0.55	0.75	0.75	1.20
Acetate Process				
150 denier	0.95	1.00	1.85	1.85
Cupra. Process				
150 denier (1.2 fils.)	0.80	0.90	1.10	.....
Nitro. Process				
150 denier (60 fils.)	0.62	0.75	0.75	1.51

•

Japan's Output Rises

JAPANESE production of rayon for May is expected to reach 50,000 cases of 100 lb. per case, according to trade estimates forwarded to the Commerce Department's Textile Division. Rayon production in that country increases rapidly. Output for March was 48,341 cases, while April production was 49,997 cases. Rapid growth is attributed to favorable export market for textiles and to lower unit production costs made possible by greater output.

TEXTILE WORLD'S

Knit Goods Digest

AS FAR back as we can remember, we have heard the slogan, "The jobber's usefulness has passed." And still the jobber is with us. As one speaker at the convention of the National Knitted Outerwear Association remarked, "for the immediate future, at least, the manufacturer needs the jobber."

Granting this to be true, the more that is done to clarify the relationship between the manufacturer and the wholesaler, the better. To that end, the negotiations between the outerwear association and the Wholesale Dry Goods Institute, reported elsewhere in this issue, promise to be helpful.

Stripped of the many side issues, the real problem can be expressed as follows: The wholesaler wants to be protected against other types of outlets by means of a price differential; the manufacturer wants the wholesaler to place his orders in sufficient volume and sufficiently in advance to permit the mill to operate with some degree of assurance.

Steps to effect a mutual solution of these problems could well be taken by all branches of the industry.—*Editor.*

Hosiery Mills in General Shutdown

PHILADELPHIA full fashioned hosiery mills, facing greatly reduced business, arranged for general shutting down from July 1 to July 11. A number of these mills were already idle through lack of sufficient business; others, operating a few days each week, also planned to close during that period. In some mills time will be spent in taking inventory. Inquiry would seem to indicate that the shutdown may be general. Mills that have been idle are not expected to open up during July, unless orders should be forthcoming. A leading manufacturer stated that this policy was in tune with the attitude taken by most manufacturers of keeping operations in line with orders. Stocks are light, so results of July inventories will be watched closely as a guide to future operating schedules.

•

Hosiery Wage Pact Extended 15 Days

UPON request of union officials, wage agreement between Full-Fashioned Hosiery Manufacturers of America, and American Federation of Full-Fashioned Workers was extended by mutual consent for a period of fifteen days. Meanwhile at recent meeting manufacturers indicated their willingness to renew the pact for another year. Desire to stabilize conditions and establish confidence of buyers was important factor. Report of commission including two representatives of manufacturers and two union officials, headed by Dr. Lindsay Rogers, Columbia University, indicated that manufacturers operating under the agreement since Sept. 1, 1931 had found business unprofitable.

Some union representatives expressed desire for increases on mesh and lace work, while some manufacturers were anxious for minor reductions on certain work, but compromising mood appeared to dominate. Convention of workers called by President Rieve July 7, was scheduled to act upon the preliminary agreement, which if adopted will be put into effect Sept. 1, for one year. Berkshire Knitting Mills' announcement of $4 line caused union manufacturers selling similar hosiery at $5 to re-study pending contract.

•

Does New Tax Affect Outerwear?

IS OUTERWEAR "sporting-goods?" On the final answer to this question, hangs the issue of whether bathing-suits, sweaters and other outer knitwear is subject to a 10% tax. The Revenue Act of 1932 stipulates that this tax be imposed on each sale by the manufacturer of articles "commonly known as sporting goods," and the listing of articles includes uniforms. Harold R. Lhowe, executive director and counsel, National Knitted Outerwear Association, said in a statement, June 23, that the only articles which could include knitted outerwear were those dealing with uniforms, and he added: "It is my opinion the act does not tax knitted outerwear, except where garment is intended as an athletic uniform solely and cannot be used for any other purpose." He cited an analogous situation in 1921, when the Commissioner of Internal Revenue interpreted a 10% tax clause in that act which covered hunting, shooting and riding garments and riding habits, as referring solely to garments used exclusively and specifically for hunting, shooting and riding.

•

Mid-Month Underwear Reopening Likely

THE PASSING of the Fourth brought a fair increase in heavyweight ribbed underwear inquiries, and mill representatives were talking of a possible midmonth reopening of fall lines. The withdrawal entered its ninth week, with market tone decidedly improved; no definite information regarding new prices was available, but manufacturers considered prospects on the point as very encouraging. Production continued light and heavyweight stocks were reported low. Fair-sized business had been placed, "at value," but buyers as a whole preferred to wait until prices were announced. Manufacturers were still divided this month on the reopening date; some told their customers they did not expect to announce prices until Aug. 1, but it was assumed a sudden last-minute spurt in buyer interest might influence them to advance the date.

Lightweight underwear lines sold moderately well at the end of June, interest centering on men's athletic shirts and shorts.

•

Hosiery Group Urges Simpler Silk Rules

THE SILK committee of the National Association of Hosiery and Underwear Manufacturers this month took under consideration a recommendation that raw silk for hosiery manufacture be reduced to a simple classification comprising five grades. This recommendation was passed as a resolution at a meeting of the association's Mid-West group, Chicago, in late June. The resolution also urged that sellers of silk be required to guarantee grade. Action was prompted by growing dissatisfaction of hosiery industry regarding "two-tone" silk now coming from Japan.

•

Outerwear Tariff Changes

A REDUCTION in duty on infants' unembroidered wool jersey outerwear valued at more than $2 per lb. and an increase in duty on such outerwear,

except jersey, knit or crocheted valued at more than $2 per lb., were approved by President Hoover, effective July 11. Under 1930 tariff both unembroidered wool jersey outerwear and wool knit or crocheted outerwear valued at more than $2 per lb., were dutiable at 50c. per lb. and 50% ad valorem. By the President's proclamation the ad valorem rate is cut to 25% on the jersey outerwear and increased to 75% on the knit or crocheted outerwear.

•

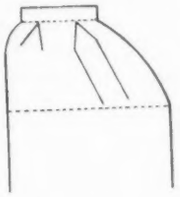
Wisconsin Modifies Minimum Wage Rule

H. L. ASHWORTH, business manager, Western District, Knitted Outerwear Manufacturers Association, Milwaukee, has notified members of an order passed by Wisconsin Industrial Commission authorizing 10% reduction in minimum wage for minors which order became effective June 10. Move is expected to assist Wisconsin textile manufacturers in meeting competition from states which do not have a minimum wage law.

•

Right and Left Hose

AN INVENTION for knitting full-fashioned hosiery with right and left feet has been patented (No. 1,859,335) by Vincent Krick, Los Angeles. In making the right foot the left carrier and narrowing-machine racks do not operate until a special diamond is reached, when they close to finish foot. Left side of toe is knitted in, straight line to joint of big toe where special diamond is inserted to give a slight curve, as shown in diagram. Large narrowing finger does not operate as draw-back at diamond. Knife is set to one side to be in position for diamond, requiring more narrowing in toe, thus shaping right side to conform to smaller toes.



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White Dominates Good Swimsuit Call

BATHING-SUIT movement continued active up to and following Independence Day, and New York merchandise managers said the season promised to close somewhat more satisfactorily than had been expected. One feature of the late buying was the strong turn to white, for both men's and women's suits, and many firms were sold out on this line, for three to five weeks. The hoped-for advance in price did not materialize, but stocks were well below demand, in numerous instances, and levels held firm. Duplicate orders were so numerous at the start of the current month, as to suggest a protracted season. Volume for 1932 may be below 1931, but this is far from sure. The main source of satisfaction to mills is the steady arrival of small repeats, and the willingness of buyers to meet prices.

•

Clinic Guests May See Non-Run Hosiery

PARTICULAR interest centered on announcement that Berkshire Knitting Mills, Reading, Pa., would hold fall fashion clinic, Aug. 4, because of widespread expectation that the company would utilize this occasion to show new non-run hosiery. Industry leans strongly to belief that non-run hosiery will be on sale before the end of August.

On June 29 Berkshire Knitting Mills reduced the price of 42-gauge 4-thread silk hosiery to $4.00 per doz.; numerous other firms followed suit.

•

Western Knitters Guests of Chicago Yarn Circle

THE Chicago Yarn Men's Circle, holding its 11th annual outing and golf tournament, entertained hosiery and underwear manufacturers from throughout the Middle West, at Nippersink Lodge, Wis., June 24 and 25. William J. Yates, of Johnston Mills Co., received the annual cup award for low net score, while E. J. Neal, of Aberfoyle Mfg. Co., had low gross. Earl Constantine, managing director of the National Association of Hosiery and Underwear Manufacturers, was an honor guest at the outing. F. W. Kingsley, of the Hampton Co., is president of the Circle.

•

Knitting Mill News

FORTY-TWO hosiery machines for manufacture of women's and children's hose, are being transferred from Elizabethton, Tenn., branch plant of Johnson City (Tenn.) Mills, to main plant, Johnson City; 44 half-hose machines are being transferred from Johnson City to Elizabethton.

Recent improvements at Bassett (Va.) Knitting Mills, Inc., underwear manufacturers, have practically doubled mill capacity. Changes include newly-installed boiler and doubling of dyeing division equipment.

Charter has been issued to Rogers Hosiery Mills, Denton, N. C., with an authorized capital stock of 500 shares, common, no par value and 500 shares preferred at 100 a share. Reorganization of company was announced in June issue of TEXTILE WORLD.

Ideal Hosiery Mills, Inc., Philadelphia, Pa., capital $50,000, has been organized to take over and expand company of same name. E. Harry Jones and Charles L. Page, original owners, head new organization.

Tease Knitting Co., Ltd., outerwear, Toronto, Ont., has awarded contract for one-story brick addition to mill building.

Circle Bar Knitting Co. Ltd., hosiery, Kincardine, Ont., has completed foundation to $30,000 addition and superstructure is now proceeding. Addition will be three stories high, with basement, 54x124 feet, brick construction.

Lambert Hosiery Co., Lambertville, N. J., organized by Frank Doherty and W. H. Chrismer has taken over Lambertville mill of Campbell Silk Hosiery Mills, purchased at a receiver's sale. Company has resumed production at the mill with close to normal working force.

The New England Hosiery Co., Inc., Winsted, Conn., has been purchased by Gilbert R. Cordin, president and secretary; and Ernest P. Cordin, treasurer, for $10,000 to be paid half cash and balance in two years.

Gardiner Warring Co., Inc., Florence, Ala., manufacturers of men's and boys' balbriggan, mesh and ribbed underwear, which was moved from Amsterdam, N. Y., four years ago, has announced an association, beginning July 1, with the following concerns: McLoughlin Textile Corp., Utica, N. Y.; Waynesboro (Pa.) Knitting Co.; McLoughlin Mfg. Co., Indianapolis, Ind., and the Greenville Knitting Mills, East Greenville, Pa. Gardiner-Warring recently purchased the ribbed knitting machinery of Robert Ablett & Co., Whitesboro, N. Y., as well as the latch needle machines, all of which will be moved to the Florence plant.

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TEXTILE WORLD'S

Processing Digest

DESPITE the increased use of fast dyes in recent years, many possibilities for extension of this use are being neglected. Particularly is this true in silk and wool goods, and in hosiery and other knit goods. This neglect is due partly to price-cutting which makes even a slight saving in dyestuff cost a factor, but far more to lethargy on the part of dyehouse and printworks executives.

The consumer wants fast shades and is willing to pay for them. Here is a case in point: A manufacturer of corduroys and velveteens was asked to supply these fabrics in tub-fast colors. He said it could not be done. A competitor is now delivering a full range of tub-fast velveteens at a price yielding a larger percentage of profit than could be made on ordinary colors. Again, tests on bathing-suit materials made this season in the laboratory of a large retailer showed a lack of yellows, greens, powder blues and some other shades that would resist even 24-hours exposure to a fast-to-light test.

Initiative on the part of dyehouses and print works in developing practicable methods of producing fast shades on these materials where they are most essential, will result in a greater volume of business and a larger profit.—*Editor.*

Finishing Activity Down

FIGURES released by the National Association of Finishers of Textile Fabrics show printing at 47% of normal average capacity during June as compared with 52% in May. Production in June, 1931, was also 47%. White and dyed combined dropped from 38% in May to 35% in June, as compared with 48% for June, 1931. Data on blacks were: fast black, June 8%, May 9%, and June, 1931, 20%; logwood or sulphur black, June 14%, June, 1931, 35%, May 16%.

Curtailment of finishing activities continued this month with wide-spread closing-down of plants during the week of July 4.

•

Stripping Agent

LEUCOTHOL, a new liquid stripping agent, has been introduced recently by Onyx Oil & Chemical Co., Jersey City. This product is recommended for stripping both acid and direct colors, including some of the Chloramine yellows not reduced by ordinary strippers. It is said to work equally well on cotton, rayon, silk, wool, mixed fabrics, piece goods, hosiery or yarns. It can be used at temperatures from 140° F. up to the boil. Boiling hastens the stripping action without any injury to the fabric. No other chemicals are used with the stripper. It can be used on padder, jig, reel machine, rotary dyeing machine or tub of Monel metal, wood, or rubber.

•

Sizing for Floor Coverings

THE Heveatex Corp., Malden, Mass., has announced Heveatex Type No. 263, designed for sizing floor coverings. It is stated that the compound penetrates and locks the pile, gives required stiffness while retaining flexibility, causes carpet to lay flat, is odorless, will not deteriorate, and allows production with less material but with great durability. This product can be applied by spraying or regular sizing methods and does not need special equipment.

•

New Dyestuffs

NEW dyestuffs announced recently by General Dyestuff Corp. are as follows:

Indanthren Brilliant Blue RCL, a vat color which yields bright reddish blues which are very close in shade to the well-known Indanthren Brilliant Blue R, but possessing the important advantage of much better fastness to chlorine. It has also excellent fastness to washing and to light. Besides its suitability for dyeing cotton, linen, and other vegetable fibers, this product is also recommended for dyeing real silk.

Palatine Fast Violet 5 R N, a new brand of the Palatine Fast series, which produces from a strong sulphuric acid bath a reddish violet of very good fastness to light, washing, decatizing, carbonizing, perspiration, and salt water. The fastness to a medium fulling is also very good. Effect threads of cotton, rayon, and cellulose acetate are left white. Palatine Violet 5 R N is of good solubility and is suitable for printing. It gives white discharge with Rongalite C.

Fast Black Salt G, a new Fast Color Salt used for printing on Naphtol AS prepare. It is superior to the existing Fast Black Salts K and B on account of its very good solubility. The new product does not require acetic acid, and yields a jet black without addition of Orange Salt.

Indanthren Printing Brown D, a vat color applied by the usual potash-Rongalite method. Prints produced with this color show excellent fastness to light, soaping, and chlorine.

Naphtol AS-LB a readily soluble compound which yields with various bases brown shades of very good to excellent fastness. It is particularly recommended for discharge styles, but is also of importance for direct printing.

•

Beam Dyeing With Vat Colors

ADVANTAGES of dyeing cotton in package form and the problems encountered in beam dyeing were outlined by J. R. S. Goodall at a meeting of the Society of Dyers & Colorists in England. According to the speaker the obvious advantages are large production, minimum space, small labor charges, economical consumption of dyestuffs, and a dyed yarn which has not been handled in process, and is consequently free from roughness or breakages, resulting in great saving of time in preparation for the loom compared with other methods of dyeing warp yarns. The chief difficulties are those of obtaining level results and clean fast shades without a tendency to rub.

Vat dyestuffs, specially prepared, are satisfactory in many cases. Many indigoid and carbazole color can be dyed with far less difficulty than the faster anthraquinone derivatives, although there are exceptions to this general rule.

Dye manufacturers now recognize that anthraquinone vat dyestuffs for use in package dyeing must possess certain essential properties: (1) complete solubility even in highly concentrated solutions; (2) their solutions must be free-flowing and not viscous; (3) they must be completely free from insoluble foreign matter; (4) they must not form colloidal precipitates with the fatty substances removed during the alkaline scouring which occurs during the circulation of the vat dyebath; (5) solutions must remain unaffected by the applica-

tion of pressure; (6) the rate of dyeing must be sufficiently slow to allow the dye solution to be in contact with the whole of the material before any substantial amount of color is taken up by the fiber.

One of the greatest difficulties experienced in beam dyeing with vat dyestuffs is caused by the very rapid rate of dyeing, with the result that thick layers of compact material are not dyed throughout. However, certain wetting-out agents have a marked retarding action on the speed of dyeing. Good results have been experimentally obtained with Perminal, Prestabit Oil V, Neoflerhernol, and Perminal MERC; but these results are merely indicative, and the whole of the available materials should be investigated.

A laboratory test for determining the suitability of vat colors for machine dyeing is as follows: 0.5 g. powder or 4 g. paste dyestuff is stirred into 400 c.c. water with caustic soda and hydrosulphite in a 500-c.c. upright breaker. Powder colors which are difficult to wet out are previously wet with methylated spirit. The solution is allowed to stand for 5 min. at 50° C., then filtered on a 1½-in. Buchner filter on a weighed piece of fine cotton cloth. A blank experiment, containing all the constituents of the bath except the color is carried out at the same time with a second piece of material. They are then dried in an air oven at 40° C., allowed to recondition overnight, and weighed. It is found that a sample of dye showing residue of over 0.012 g. has usually to be rejected for machine dyeing.

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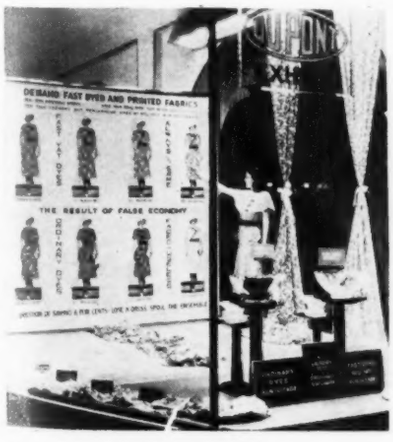
Boosts Fast Dyes

AN EDUCATIONAL exhibit arranged to demonstrate, by means of actual tests, the difference between fast dyes and ordinary colors has been set up in one of the Boardwalk windows of the Du Pont exhibit, in Atlantic City. In the background are two rows of figures, the top row demonstrating various stages in the laundering of a fast-dyed print, and the second showing the same stages of a print printed with ordinary dyes. The first figure in the two rows illustrates unwashed fabrics; the second, third, and fourth show results of first, fifth, and tenth washings, respectively. with the colors remaining the same for the fast-dyed material, and fading in the ordinary-dyed print until, with the tenth washing, they have entirely disappeared. Cut-outs of the figures are backed with printed fabrics. Tests are conducted by a demonstrator who works in the front of the window and shows the results obtained upon washing the two types of fabrics.



Fast color exhibit

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Approve Sulphonated-Oil Standards

MANUFACTURERS, distributors, and users of sulphonated oils approved the commercial standards for grading sulphonated oils which were proposed at a general conference held last month in New York. The specification, which includes plant definitions, nomenclature, and analytical methods, will now be submitted to producers and distributors of sulphonated oils for final adoption under the certification plan of the U. S. Bureau of Standards. A standing committee was appointed at the conference to recommend to the Bureau any changes in the methods of analysis which are found necessary upon completion of researches now being conducted.

•

Do You Need a Chemist?

REGISTERED with the Chemical Unemployment Committee, 300 Madison Ave., New York City, are 30 unemployed chemists and chemical engineers, each of whom has had one or more years of direct experience in the textile industry. This presents an opportunity for the industry to obtain experienced, technically trained men who are not ordinarily available. Since the first of the year the committee has registered 608 chemists and chemical engineers living within a radius of 50 mi. of New York City and has located jobs for 130.

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Dark Shades on Dull Yarn

SEVERAL finishers report success in overcoming obstacles hindering production of dark colors on dull acetate fabrics. Hitherto the problem in dyeing dark shades on materials composed of matt yarns has been to prevent relustering of the fabric. This difficulty surmounted by development of new processing methods, dyers are now bending efforts to bring costs to reasonable basis. Excellent results are produced on crepes, piece-dyed knit goods, and skein-dyed yarns.

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Processing Plant News

SERVICE Dyeing & Winding Co., Central Falls, R. I., has increased its productive capacity by purchase of the Anchor Mill at Harrisville, R. I. During removal of its machinery and equipment to Harrisville, production continued without interruption. Anchor Mill which was formerly operated by the American Woolen Co.

Hohokus (N. J.) Bleachery has started operation of its new vat-dyeing equipment for cotton piece goods.

Disco Dyeing Corp., Paterson, which has been in receivership for several months has been returned to its owners, Alfred W. Peardon and Roswell C. Peardon. Receivers reported successful operation of the plant during the last two months with a profit of $25,000.

The Lawrence (Mass.) Dye Works reports encouraging progress in its plan to sell 7% preferred stock in small amounts to a large number of local stockholders.

Southern Bleachery & Print Works, Inc., Taylors, S. C., has awarded contract to Gallivan Building Co., Greenville, for erection of a three-story warehouse and office building, 160 x 100 ft. Plans were prepared by J. E. Sirrine & Co., Greenville.

The Textile Realty Co., Providence, R. I., has purchased the buildings and equipment of the Solway Dyeing & Textile Co., Pawtucket. It is planned to erect additional buildings suitable for manufacture.

Textile World Analyst

MANUFACTURING MARGINS CONTINUE TO SHRINK

General textile activity for the first six months of 1932, based on total fiber consumption, was 18% less than for the first six months of 1931 and 27% less than for the first six months of a normal year. In determining a normal year, month by month consumption figures for the period 1924-1931 were averaged.

▼ ▼ ▼

AT THE beginning of June there were signs that the worst of the price war was over and that manufacturing margins, or the spread between the cost of raw material and price of finished goods, would discontinue the long process of shrinking and that some expansion might take place. About the middle of the month, however, another sag carried margins to record lows. The following figures represent the margin between raw cotton, less waste, and the average poundage price of a group of carded print cloths:

Date	Margin in Cents
July, 1931	15.3
Oct., 1931	12.3
Jan., 1932	12.1
April, 1932	13.9
May, 1932	11.0
June, 1932	9.5

When it is considered that this 9½c. must cover spinning, weaving, freight, discounts, selling expense, etc., it is at once obvious that the question of profits does not enter the calculations at all. The course of 64x60, 38½ in., 5.35 print cloth during June is typical. At the start of the month the manufacturing margin, on a poundage basis, was 10.5c. The price advanced slightly, but then hit the toboggan about the third week of the month, despite the fact that cotton was advancing. As a result the end of the month saw the margin shaved to 9.7c.

Carded yarns described a similar course. At the first of the month 20/2 K. P. warps, for example, were quoted at 13c. per lb. At the end of the month cotton had advanced 36 points, but the price of 20/2 had dropped to 12.75c. per lb. What happened to manufacturing margin is shown by taking the average price of a group of carded yarns and subtracting the price of cotton with the waste factor included. The first week in June the margin was 10.24c. per lb. and the last week it was 9.17c. Other figures are: October, 1931, 12.7c.; April, 1932, 10.8c.

After holding up fairly well, combed yarn margins took a decided drop in June as compared with May. The spread between 60/2 C. P. warps and 1¼ in. cotton, less waste, was 21c. in June and 24c. in May. The only other time this margin has been so low was during last October when it was also 21c., but from that level it rapidly climbed back to 24c.

After the price cuts of May had reduced margins in the worsted industry to record lows there was a slight steadying during June. While it is not practical to use a composite cloth price in figuring margins as there are so many variable factors over a period of time, the situation in worsted yarns gives an indication of the trend. After dropping from 76c. last July to 63c. in May the margin between clean wool and representative yarns showed a slight gain in June and stood at 64c., although it is probable that the gain is more apparent than real as worsted spinners have shown a lag in adjusting quotations to lower raw wool prices.

Each one of TEXTILE WORLD's price index numbers established a new low in June. The only prices that are above 1914 are worsted yarns and cloths, whereas silk is selling at 25% of its 1914 value, cotton 42% and wool 62%. The outstanding feature of 1932, so far, has been the drop in the raw wool index from 94 in January to 62 in June and the corresponding drop in the cloth index from 147 to 116.

As consumption figures become available they serve to emphasize the low ebb of the textile industry in May and June. May wool consumption was only 16,519,325 lb., which is by far the lowest figure of modern days. Only 27% of the wide looms in place operated at some time during the month and it is probable, in view of the improvement lately, that May will stand as the record low in the wool industry.

The extremely low rate of activity, coupled with the decline in manufacturing margins has led to the closing of many cotton mills for various periods during the summer. It is obvious that the general run of mills finds profit-making an utter impossibility at prevailing prices and closing both cuts the loss and has a healthy influence on prices. Certainly something drastic is indicated by the slimness of manufacturing margins.

Textile World's Index Numbers

Date	Cotton Index Numbers: Cotton	Cotton Yarns	Gray	Colored	Wool Index Numbers: Wool	Tops	Yarns	Cloth	Raw Silk Index: Date	Raw Silk
July 31, 1914	100	100	100	100	100	100	100	100	July 31, 1914	100
1925	193	193	193	177	221	226	222	234	1924-25 season	140
1926	146	159	161	152	189	195	199	210	1925-26	172
1927	130	146	153	147	179	184	186	195	1926-27	141
1928	160	162	163	166	218	201	198	197	1927-28	126
1929	158	163	156	168	182	184	193	198	1928-29	126
1930	114	131	127	147	131	143	164	190	1929-30	104
1931	75	97	99	121	102	114	134	165	1930-31	62
1932										
Jan.	53	78	74	102	94	104	127	147	May, 1932	28
April	49	75	73	98	83	98	121	133	...	...
May	46	69	68	96	74	90	119	119	...	...
June	42	66	63	94	62	76	110	116	June, 1932	25